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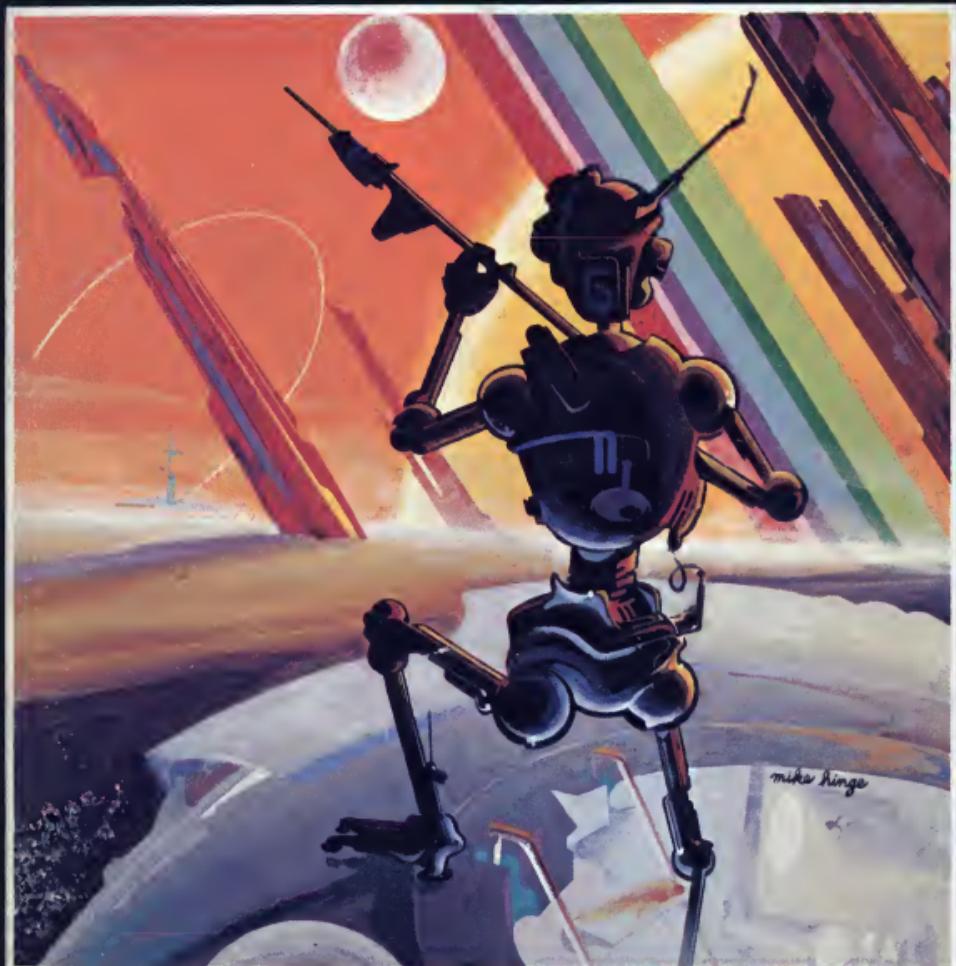
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November
1971
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THE WRONG END OF TIME by JOHN BRUNNER

IN HIS IMAGE by Terry Carr • ROAD FACTORY by W. Macfarlane
TO END ALL WARS by Gordon Eklund



IN MEMORIAM: JOHN W. CAMPBELL by Sam Moskowitz

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**JOHN BRUNNER'S BRILLIANT NEW NOVEL
THE WRONG END OF TIME**

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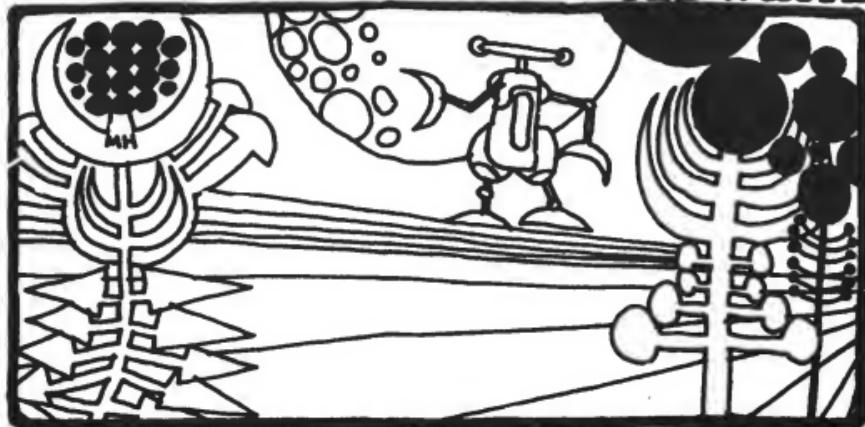
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EDITORIAL

I was not editing this magazine when *2001* first came out, and my only forum for my opinions on that movie was a fanzine. It's just as well; with everyone and his little brother rushing into print to express his opinion, mine would only have been lost amid the noise—and, in fact, was.

But the conflict of opinions seemed to reveal a remarkable polarization in the reviewers, and this fact is brought back to me in startling clarity by Baird Searles' *Films* column in a recent issue of *F&SF*.

"A movie is not a book," he says forthrightly. "Film is not print. Cinema is not literature." He said it all in italics, as though the importance of this observation required it. I cannot quarrel with such an observation, and wouldn't mention it at all if he had not gone on to say, in almost the next breath (without italics), "I was never more taken aback in my life than by the reaction of many s-f people to *2001* (primarily the old guard), and it took me a while to realize why they were so negative. They were indoctrinated to being *told* things, not *shown* things. And *2001* as a literary experience doesn't add up to much.

But as a cinematic experience, it is, of course, a masterpiece."

I stopped short on the "of course."

Thomas Maramaa makes a related point in an equally recent issue of *Earth*, when, in the course of reviewing John Simon's *Movies into Film*, he says, "*2001* was the ultimate trip movie. It defined and expanded, at once, the tradition of the science-fiction film. The concerns of the young audience who took the trip, probably stoned, were doubtless far from Simon's concerns. For he approaches a film much in the same way he sees a play or studies a work of fiction. With words, with concepts. The language of the new cinema is more visual, more non-verbal than ever before. Critics like Simon will have a harder time of understanding it."

In both these almost parenthetical defenses of *2001*, the same point is being made: that the film must be appreciated as film, *qua* film. If one brings "literary" standards to bear upon it, one is missing its point.

But, are we?

What distinguishes the film from any

(Continued on page 122)

What do you think would happen if:

A group of workers controlling all the nation's transportation decided to strike?

A temperamental child could destroy anything displeasing him?

A key defense scientist became convinced man was no more than a high-class bacterium cultured by a superior life form?

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Danty had a simple problem: he didn't know what would happen next—only that in some mysterious way it would involve him with the man who came out of the sea, a spoiled young girl, and—just possibly—the c-t aliens who waited out beyond Pluto...

THE WRONG END OF TIME

JOHN BRUNNER

Illustrated by DAVID COOK
(Part I)

I

ABSOLUTE CALM, though not absolute stillness. The sea shifted lazily against the sandy beach, its motion indexed not by the white crests of ripples—the water was too oily for waves to break—but by the pale spots of imperishable plastic rubbish.

Tangled greenery grew down to within a short distance of the tide-mark.

Night. The sky was almost clear of cloud. There was no natural moon, but—as though Phobos and Deimos had been transported from Mars—two small man-made moons arced between the stars.

Silence. Only branches rustling and the sound of the sea.

Less than a mile off-shore, a smear of white obtruded on the glassy water. It could have been due to a partly submerged rock. It was not. It lasted two minutes and disappeared.

Something fractionally blacker than the black ocean began to approach the land.

A shadow among shadows, Danty Ward crept through the underbrush. He felt his footing at each step so that he did not break the night-quiet; nonetheless he managed to move rather swiftly. He wore a dark jersey and dark pants, and he had paused by a puddle to smear mud on the highlights of his cheekbones and forehead. Gilding the lily in reverse. He was not following a trodden path, but he was keeping parallel to and a few yards from a dirt road which few people travelled. Indeed, hardly anyone came to this stretch of shore at all. It was most inadvisable to try. There were complex alarms and boobytraps, not to mention an electronic fence. Beyond these, hidden among trees and thickets, were highly efficient radar antennae. There were also silos in which were sunk short-range missiles with nuclear warheads of about quarter-megaton ca-

pacity. Back near the superway he had passed posters that showed a clenched fist hammering a city into ruins. Underneath captions said: PART OF THE WORLD'S MOST PERFECT DEFENSIVE SYSTEM.

He had taken the precaution of turning everything off.

Somewhere nearby came the scrunching sound of a foot moving in gravel. Danty halted stock-still to feel the world, then stealthily made towards the road he had been avoiding. Parting the fronds of a flowering bush, he saw a car on the other side of the track, about twelve feet away. A man leaned against it, his left wrist held close to his face as if he were trying to read his watch in the thin before-dawn light.

With a little nod of satisfaction Danty slipped back into nowhere.

He passed on now towards the beach, coming soon to the point at which the greenery thinned and left only tough dune grasses, courtesy of the Federal Erosion Commission. "Every man is a piece of the continent, a part of the main; if a clod be washed away by the sea..."

Like living on a melting iceberg.

A few yards further on, a boulder stuck its blunt snout up from the sand. Danty looked both ways along the beach, then darted into shelter beside the rock. His back against it, he relaxed, invisible until daylight.

If he was right, though, he would be gone by then.

He stared seaward. Straining his eyes, he discerned something more coherent than a chance assembly of weed or garbage being carried inshore. Matt-dark, but a little shiny because



it was wet. Purposively shaped. A man in a survival suit.

Danty allowed himself a grunt of self-approbation, and concentrated on making his relaxation still more complete.

Vassily Sheklov, on the other hand, was tense. He had no qualms about the suit he was wearing—it was a very advanced model, and he would cheerfully have bet on it to carry him through hell-fire. It could not, however, protect him from the oppressive weight of knowledge about his situation which bore down on his skull as though the dome of the night sky were leaning its entire awful burden on his head. He had unwisely allowed the submarine captain to press a last glass of vodka on him, by way of a toast to the success of his mission. The liquor—and his careful yoga exercises—had sustained him during the nerve-racking period while they were inching towards the coast, sometimes within a metre of grounding on the bottom; to duck beneath the sweep-pattern of the radar they knew to be located hereabouts, they had to break surface not more than a kilometre from the beach, where the water was ridiculously shallow for such a big vessel. But now he was out here on his own he was horribly aware of what that slug of alcohol might have done to the speed of his reflexes.

Landing in a spot which was as thick with nuclear missiles as a porcupine's back with spines! He had to keep reminding himself that the paradoxical advice had come from Turpin, who ought to be reliable if anyone was. According to him a reserved area was the safest choice, provided the submarine didn't trigger the automatic

firing mechanisms, because Americans were almost superstitious about such places and nobody would be within miles.

Thus far the advice had proved sound. Sheklov noted the fact in the tidy mental card-index of data about Turpin which he was compiling.

His knees touched bottom. He found his footing, and abruptly the buoyancy of his suit converted into weight. Not a great weight. He stood up with sea around his legs and looked the scene over.

Nothing moved except branches and man-made litter bobbing on the wavelets.

He went up the sand looking for the tide-mark, and found that the full tide, due soon after dawn, would erase all but a few of his footprints. When he gained the protection of the first bushes, he opened his suit and peeled it off. Underneath he wore authentic American leisure clothing, smuggled via Mexico or Canada.

He laid the suit down in a wind-sculpted hollow and hit the destruct switch on its shoulder. Faint smoke drifted up, and the plastic began to deliquesce.

Waiting for the process to go to completion, he used a fronded branch to scuff over the three footprints he had left above the high-water mark. On his return to the suit he found only a puddle of jelly, already beginning to soak into the sand. He shovelled more sand over it with a bit of jetsam and tossed miscellaneous garbage on top of the little pile. Then, with a final glance out to sea to confirm that the submarine had vanished, he headed inland.

Danty rose from his boulder and

faded into the undergrowth again. He kept pace, discreetly.

Sheklov found the dirt road easily. The captain had been laudably precise in his navigation. He walked by its edge—carefully, because it had rained here within the past few hours and the ground was soft—until he came within sight of a car: an expensive make which he recognised from his briefing. Waiting beside it, a man raised his arm in hesitant greeting.

Continuing at a neutral pace, Sheklov studied him. He wore a dark jacket and pants, by Russian standards rather old-fashioned. He was about fifty, above medium height, plump-cheeked, paunchy, sweating a little—from nervousness, presumably, because the night was cool . . . Yes, this was Turpin okay. Either that, or someone had gone to a lot of trouble to prepare a duplicate.

Now the man spoke in a wheezy whisper, saying, "Holtzer?"

Sheklov nodded. For the time being, he was indeed Holtzer.

Turpin let go a gusty sigh and mopped his forehead with a handkerchief. "Sorry," he said, the word muffled by its folds. "The strain of waiting was beginning to get to me. Uh—did you have a good trip?"

"Well, the water was pretty dirty," Sheklov said, and tensed for the answer. It was conceivable something had gone wrong, at the receiving if not at the delivering end. But Turpin's response was word-perfect.

"Still, the air around here isn't too bad."

Sheklov let a thought form in his mind.

I made it!

The realisation hit him with almost physical violence, so that he did not immediately react when Turpin opened the car-door and motioned for him to get in. Belatedly he complied, noting the decadent luxury of the vehicle's interior . . . and then the sullen inertia of the door as he closed it.

Armoured, of course. The thing must weigh six or seven tons. And in plain sight next to the radiation-counter: a gun, its muzzle snugly inserted into a socket on the dash, its butt convenient for the driver's right hand.

Well, he was going to have to get used to that kind of thing.

"What about tracks?" he said, thinking of how deeply so much weight could drive tires into ground as soft as he had just been walking on. Turpin started the car and began to turn it around. It was equipped exclusively with manual controls, naturally. He'd had it dinned into him that over here people liked to gamble with each other's lives on the roads.

"Sonic projectors in the wheel-arches," Turpin answered. "They homogenise dust and mud. If someone comes by before the next rain he might realise a car has been this way, but he won't have a hope in hell of identifying a tread-pattern. But don't talk until we're out of the reserved area, please. I shall have to use some pretty tricky gadgets to get us through the perimeter alarms. As soon as we hit the superway, though, we can relax."

The third time he sawed the car back and forth, it was facing in the direction he wanted, and he sent it silently down the track, back to the superway, back to the real America.

When the car had gone, Danty

stepped out from the bushes and began to walk unconcernedly in its wake. He was a mile or so from the superway. He would reach it a few minutes before dawn.

He didn't bother to turn the site back on.

II

THE MUD ON DANTY'S FACE had dried. Rubbing at it as he walked, he reduced it to a greyish smear. That would have to do until he reached soap and water.

Emerging on to the hard shoulder of the superway between two billboards advertising insurance against juvenile leukaemia and KOENIG'S *INTIMATE INSULATION*, he gazed towards the oncoming traffic. He ignored the long-distance freight-trucks, which had schedules to keep, and concentrated on the last of the night-riders, the lamps of their cars dimming as they headed home for a day's sleep. These were the people who seemed to feel oppressed by the isolation of their continent, even though it was three thousand miles wide, and needed to relieve their tension by simply going, regardless of whether there was any place to go to.

It was the third car which stopped: a red and gold Banshee. The dead weight of its armour made it almost nose-dive into the concrete as it responded to its compulsorily excellent brakes. The man at the wheel wore a snug hat and tailored fatigues, and also—as he stared at Danty—an expression of surprise.

Not at what he saw. Danty was ordinary enough to look at, apart from the mud on his face: young, thin, mid-brown complexion, sharp chin, dark

eyes above which his brows formed a shallow V. But at the notion of stopping for him in a state where hitchhiking had been illegal for decades.

Before he could recover his presence of mind, however, Danty had sauntered over and leaned on his door. Rashly, the man was driving with its window open.

"Going to Lakonia?" he inquired.

"Uh . . ." The driver licked his lips, hand hovering close to his dashboard gun. "Now look here! I didn't stop to give you a ride! I—"

And broke off in consternation. The question had just occurred to him: *Then why in hell did I stop?*

He could see no other reason than Danty. Who went on looking at him levelly.

"Ah, shit," the driver said at last. "Okay, get in. Yes, I am heading for Lakonia."

"Thanks," Danty said, and went around to the passenger's door.

Before his unwelcome companion had fastened his safety-harness, the driver stamped on the accelerator and shot back into the centre of the road, watching his mirror anxiously—not so much for following cars, as for a patrolman who might have witnessed that entirely unlawful pickup. The speedo needle reached the limit mark and stopped climbing; nonetheless their speed increased perceptibly afterwards. Danty concealed a grin. Another reason for the driver to feel worried. Plainly he'd eased the control on the governor. Everybody did that, but you were still liable to arrest if you were caught.

Relaxing after a mile or two without incident, the driver reached for the cigarette dispenser.

"Want one?" he asked reluctantly.

"Thanks." Danty shook his head.
"Don't use them."

The driver took his, ready-lit, and sucked on it twice before speaking again, this time with the petty bravado of a man defying the law and trying not to let the fact bother him.

"Now don't you get the idea I go around the country free-lifting all the time!"

"Of course not," Danty said equably.

"So you'd better be a friend of mine, hm? Just in case. My name's Rollins, George Rollins. What's yours and where are you from?"

"Danty. And it says Cowville in my redbook."

Rollins betrayed obvious relief. Cowville was right next door to Lakonia; in fact it was the nucleus from which Lakonia had spread, like a stump of wild-rose root with a gorgeous over-blown double floribunda grafted on it. Taking a man back to his home city wasn't too bad. Danty let the idea curdle.

Then he added mildly, "But mostly I'm from all over."

"You make a habit of travelling this way?" Rollins curled his lip. It was probably in his mind to add: *Because if you do, you must be a lousy reb! Everybody knows they shave and cut their hair nowadays!*

"No, this is kind of a special case."

"Glad to hear it!" Rollins snapped, and fell silent. After a moment he reached for the radio buttons and snapped on an early-morning music programme. Soothed by the sound of the current chart-toppers, the Male Organs, Danty dozed.

He awoke to a prod in his ribs and the sound of the gas-gauge emitting a penetrating hum.

"Got to pull in for gas," Rollins told him unnecessarily. "Now you watch how you act, hear? Don't want some radiated gas-attendant to turn me in for free-lifting!"

Danty touched the gritty mud on his face. He said, "Well, then I can get to a washroom and clean up."

"You do that! And watch yourself!" Rollins ordered.

His imitation bravado leaked away as the car slowed. His lips moved as though he were rehearsing what he would say when they stopped.

He was. Therefore it came out smoothly enough. "Fifty, please!" he called to the attendant in his overhead booth, watching the forecourt through armour-glass with his hands poised above the triggers for his guns.

"Fifty it is," the man answered, and began to haul on his waldoes. Angled, a fuel-pipe launched down from its high hook and sought the car's filler like a blind snake.

So far, so good. As Danty left his seat, Rollins breathed easier. Hell, was anyone—even a gas-attendant, in a trade which encouraged paranoia—going to turn him in for a little free-lifting? Of course not!

And then his stomach filled with ice-cubes. There was a cop rolling into the gas-station, masked and armoured, like a mere extension of the single-seat racer which he rode.

Patrolman Clough yawned hugely as he dismounted. That was a slow job, involving a thorough survey of the vicinity, then the folding back of four light-alloy bullet-deflectors. But finally

he freed himself, stood upright, and stretched and yawned again. The quick dash of midnight had worn off, and he was having to pull in more and more often to rest up. The endless concentration tired the brain. Police racers had no governors on them, only a red line at the hundred-fifty mark which the rider was forbidden to exceed except in emergency. Something to boast about in company—"they don't turn loose any but the picked best on the superway without a governor!"—but on the job, not so much fun.

Only one car in the station. Banshee. Cheapjack make. Slick lines, sure, but inside—well, built-in obsolescence, of course. Trouble being they sometimes guessed wrong, the obsolescence progressed too quickly, and then he or someone was picking bits of people out of the wreckage.

Not this one, though. A last-month's model, red and gold.

Driver sort of nervy... Wonder if he's disconnected his governor. Sort of thing the guy who buys a Banshee might do. Easy to short the governor circuits on one of these. Not a bad idea to have him lift the hood, take a quick squint.

He snapped back the visor of his helmet and strode towards the car.

Rollins rubbed sweaty palms inconspicuously on the sides of his thighs. "Morning, officer!" he exclaimed, and damned his voice for skating up towards the treble.

The patrolman gave a neutral nod. Rollins told himself he couldn't possibly have seen the disreputable passenger, and whatever was bothering him with luck he'd guess wrong and be away before Danty emerged from the washroom. In fact it might be a good

idea to get back on the road without Danty, if he could. What in the world could have possessed him to stop for a free-lifter? And a reb at that, more than likely!

The gas-pipe withdrew to its hook. A cash-drawer shot out of the side of the pump within easy reach of him. But he was so intent on the patrolman that at first he didn't notice, and the attendant had to parp on his hooter.

Damnation. Now the pig will know I'm rattled. He fumbled a credit-card from his pocket and laid it in the tray. The patrolman followed every move, and when the drawer had clicked shut he said, "Mind lifting your hood, mister?"

"Uh..." Well, there was no help for it. He flipped the release and the hood ascended three feet on lazy-tongs mountings, sighing. *Look, officer, I have a clean license ten years old, everyone eases the governor control a bit, it's not as though I'd been in an accident...*

But the patrolman only glanced at the engine, nodded, and made to turn away. Rollins exhaled gratefully.

Must have thought the governor was cut out completely. Who but a damned fool—?

And Danty re-appeared.

He'd washed, and wiped the stubble of beard from his chin with Depilide, but even so he didn't match a brand-new Banshee. And here he was opening the passenger door. You could almost hear the tumblers clicking in the pig's head, like a fruit machine.

"Hah!" he said after a tense pause. "Let's see your redbook, you!"

Danty shrugged, unzipped his hip-pocket, and held out his red-covered identity papers. The silence stretched as the patrolman seemed to be reading

every single word. Finally Rollins could bear it no longer.

"Is something wrong, officer?"

The cop didn't glance up. He said, "Friend of yours, mister?"

"Sure! Of course he is!"

"Tell me more." The machine-like helmet still bent over the redbook.

"Uh . . ." Rollins's mind raced. "Why, Danty's from Cowville. Close to where I live. We just been night-riding a bit, that's all."

Though if he asks what this radiated reb's other name is . . . !

The patrolman slapped shut and returned the redbook. "Okay," was all he said, but under his voice, clear as shouting, he was adding: *So, a couple fruits most likely. I should arrest that kind on suspicion? I'd be at it all day. Anyway, they'd jump bail and head for a state where it's allowed.*

Frantically Rollins started the engine again, eager to get away from here.

"Your credit card," Danty said, and pointed. Rollins snarled, snatched it from the cash-drawer, and trod on the gas. Danty was amused to see that he must have worked out what the pig was thinking. He was blushing scarlet clear down to his collar.

Behind them, Patrolman Clough made a routine entry in his tape-recorded log. But, two or three minutes later, as he was emerging from the men's room, a car howled past at far above the legal limit, and he scrambled back on his racer and took out after it, yelling for assistance on his radio. In the excitement of the chase he clean forgot about Danty and Rollins.

III

TURPIN WAS PLAINLY ill at ease and could not make up his mind how to open a conversation. For the time being that suited Sheklov. He wanted to get the feel of America, hammering home on the automatic level what he had learned on the conscious. Already he had noticed a contradiction. From the radio which Turpin had switched on, as though by reflex, music was emanating of a kind which he himself had barely encountered since his teens, when his generation still thought it "progressive" and "liberal" to imitate the example of western rock-groups. The sound was imbued with curious nostalgia. Then, between items, an announcer resolved the paradox by saying that the programme was aimed at the eternally youthful and proceeding to advertise a skin-food.

For men, as well as women. He sniffed. Yes, he wasn't mistaken; Turpin was heavily perfumed with something which hadn't been detectable in the open air, but had built up in the closed metal box of the car, despite the conditioning, until it was overpowering. He thought of asking for a window to be opened, but changed his mind. He was going to have to adjust.

To things like this superway, for instance. Back home, the roads he knew were typically two or at most three lanes wide, laid with geometrical exactitude across the landscape, carrying far more trucks and hundred-passenger buses than private cars, and had control cables laid under the surface so that no mere human being should be called on to avert an accident at 200 k.p.h.

But roads weren't really important. You could use less land and shift more people with a hovertrain riding concrete pylons, or for long distances you would fly.

When this road, with its opulent curves, came to a rise in the ground, its builders had contrived to give the impression that it eased itself up to let the hill pass beneath. Elegant, certainly. Yet so wasteful! Eight lanes in each direction, not because there was so much traffic, only because that much margin must be allowed for human error!

Thinking of speed... He repressed a start as he looked at the speedometer. Oh, yes. Not k.p.h., but m.p.h.; the Americans had resolutely clung to their antiquated feet, yards and miles, just as they had clung to Fahrenheit when the rest of the world abandoned it. Even so, he hoped that Turpin was a reasonably competent driver. He himself had never attempted to guide a land-vehicle at such velocity.

Now, finally, Turpin was addressing him: "Cigarette?"

"Please." It would be interesting to try American tobacco. But he found it hot, dry, and lacking in aroma.

Ahead, a lighted beacon warned traffic to merge into the left lanes, and shortly, as the car slowed, he saw something that confirmed his worst fears: a wreck involving two trucks and a private car around which a gang of black men were busy with chains, jacks and cutting-torches. On the center divide an ambulance-crew waited anxiously to be offered a cargo.

When was someone last killed on the roads, Back There?

He watched Turpin covertly as they passed the spot, and read no emotion whatever on his face.

Well, to sustain his pretense for so long, obviously he must have had to repress his natural reactions...

Yet Sheklov found the explanation too glib to be convincing.

Then, a little further on, they encountered another gang of workmen, also black, being issued with tools from a truck on the hard shoulder. Some of them were setting up more beacons. That was a phenomenon Sheklov had been briefed about: a "working welfare" project. Obviously they were here to repair the road; equally obviously, the road didn't need repairing. But it conformed to the American ideal: you don't work, you don't eat.

He felt a surge of pride as he reflected on the superior efficiency of a planned economy. Then, sternly, he dismissed the thought. The system must work, otherwise human beings could not tolerate it. It was not for him to say that it oughtn't to work. Enclosed, isolated, offensively conceited, the Americans were still human, and what they did among themselves was *ipso facto* to be respected as part of the vast repertoire of human potential.

Drawing a deep breath, he closed his eyes for a moment. Words formed in memory; they said, "O Dhananjaya, abandoning attachment and regarding success and failure alike, be steadfast in Yoga and perform thy duties."

And his duty at present was to be Donald Paton Holtzer, who had never heard of the Blessed Lord's Song.

There was considerable traffic on the move. He saw hundreds of cars, mostly

as they were left behind, because Turpin had clearance for the fastest lanes, but two or three times howling monsters tore past them illegally on the inside, and once they were overtaken by a patrolman on a racer with his siren howling like a soul in torment.

The roads, while still in usable condition, were being torn up and remade. So too the cars were destined for a short, short life. Everything about this silent limousine of Turpin's was ultra-modern, including its schedule of obsolescence. Approximately six months old, it was already as close to the scrapyard as to the factory.

And from the scrapyard its elements would go to the factory again.

Talk about taking in each other's washing... But he slapped that down in his mind, too.

Now and then they passed in sight of enormous housing developments, and Sheklov also studied these carefully. Apartments stacked in towering blocks. Gardens around them, or parks. Trees in neat lines, force-grown with paragibberellins. He found them attractive, but somehow flawed—perhaps by the way they resembled one another, as though they had been mass-produced complete with occupants. They were becoming shabby. His briefings had included a thorough conspectus of the cycle of American fads and fashions, and he was able to date them as having been built about twenty-five years ago—just about the time, indeed, that Turpin was planted in the States.

Reminded of his companion, he turned his head. Turpin's eyes were on him.

"You're very quiet," Sheklov said.

Turpin gave a plump-jowled grin. "I

figured you'd start talking in your own good time. Make the most of this ride, though. I do have a bug-free room at home, of course, but this car is even safer. And we're coming pretty close to Lakonia now."

He seemed to have recovered completely from his earlier nervousness.

"Frankly," Sheklov said, "I was expecting you to ask what brought me here. I gather you weren't informed of the details." He spoke easily in the language he had practised non-stop during his briefing period.

"I didn't question the decision," Turpin said stiffly. "After all, I've been thoroughly absorbed by now, and your people—" He bit something back.

"Go on," Sheklov encouraged.

"All right, I'll have to get around to it sooner or later. Your people don't seem to set much store by me nowadays."

Sheklov displayed genuine surprise. "I don't know where you got that impression! I've always heard that your complete assimilation has made you the most valuable single agent we've ever had here. Why else would they have called on you to cushion my arrival?"

Turpin didn't answer, but pressed his lips together in a thin line. Sheklov could gloss that expression easily enough. *Because you'd have been told I was good, to bolster your own confidence; or because I'm to be eliminated and you're to replace me; or because you're expendable yourself, and meant to bring about our joint downfall; or because I'm suspect and you've been assigned to investigate me...*

Turpin sighed. "Oh, what's the point of worrying? I do as I'm told, that's all. I laid on exactly the cover for you

that was requested—you're Canadian, timber-salesman, been down here sounding out a new pulp contract, recommended to Energetics General by your parent firm, looking for a supplier of plastic glue for bonding chipboard, staying with me at Lakonia because we're very eager to close that deal. Which is true; we're short of foreign currency, as you know. There's a bag in the trunk for you, with clothes, ticket-stubs, hotel bills, a raft of genuine material. Anyway, the fact that I speak for you will protect you from security."

That sounded too pat. Sheklov was about to voice a question, when Turpin added, "And for extra insurance I'll have you photographed with Prexy."

He tossed that off casually also, but if it was a promise he could keep, Sheklov felt, he was entitled to be proud of his record. They had told him over and over how well-established Turpin was, and though he reserved the right to doubt it until he saw it happen he was prepared to believe that Turpin could indeed invoke the President to reinforce his cover.

"You brought up the purpose of your visit," Turpin went on. "I imagine it's to check me out. Don't think I'll be offended if you tell me."

There was overt bitterness in his tone. Sheklov saw in that a reason why the people Back There might have downgraded this man in their minds. But if they had none of them had let slip the slightest suggestion of the fact.

"It's nothing to do with you at all," he grunted. "We've run into a problem we can't solve. We're at our wits' end. And since we've looked everywhere else for ideas, we're finally being driven to look for some over here."

He wondered if his own scepticism showed in his voice. He was thinking: *Pluto! Hell! Half the people in this country probably never heard of it, and the rest must be old enough to remember Disney's dog!*

Turpin took a fresh cigarette. "Hah! It must be quite a problem, then. Explain! I want to know what's so important that I have to risk everything I've built up in twenty-five years."

Sheklov marshalled his words carefully. He'd rehearsed this introductory exposition many times, of course. He said, "As a senior vice-president of Energetics General, you must know as much as any one man about the defence system of this continent. Right?"

"Why not? We designed most of it. We still contract for its servicing. And have I ever failed to notify your people of our newest developments?"

"No, you haven't," Sheklov said fervently, and felt a shiver go down his spine. In a sense, the fact that Earth had not long ago dissolved into a nuclear holocaust was due to this man at his side. It was awe-inspiring to reflect on that.

"So tell me," he continued when he had recovered from his brief access of wonder, "what would happen if—say—New York were wiped off the map by a total-conversion reaction."

"A—what?" Turpin jerked in his seat. Ash fell from his cigarette to his thigh. He brushed at it, and missed.

"Total-conversion, I said. Well?"

"Well! Uh..." Turpin licked his lips. "Well, it would depend on whether anything had been detected coming down from orbit."

"Something would have."

"Well, then! Uh... Well, everything in the sky not accounted for by the

flight-plan at Aerospace HQ would be taken out by ground missiles. That's automatic. Then the orbital hardware would be activated, and you'd lose the tovs."

"Tobs?"

"Tovs. Didn't they give you that? Careless! Short for *tovarich*. That's what we call your manned satellites."

You: we. Force of habit, probably. Camouflage. But Sheklov found himself wondering how deep the camouflage went in Turpin's mind after a quarter of a century.

"Is there a lot of orbital hardware?"

"Enough," Turpin said, and gave a thin smile. "Sorry, but you might let slip something you're not supposed to know."

Sheklov allowed him the petty victory. He said, "And then . . .?"

"Within about two minutes, the Nightsticks would be homing on their targets. They're solid-fuelled inertial-guided missiles with—"

"Yes, we know about those. Thanks to you."

He said it deliberately, to determine how much the reminder would affect Turpin. The answer was—severely. He stuttered for several seconds.

"Anyway!" he pursued. "Within eight minutes and thirty seconds twelve thousand megatons would go down on East Bloc territory. And if there were another—"

Sheklov held up his hand. "The world's most perfect defensive system. Yes. We've taken great care for many years to avoid tripping this country's deadly burglar alarms, but they still exist, which means that people must think they're still necessary."

"We're doing our best to cure that!" Turpin said with a hint of anxiety.

"Though naturally in my position I daren't—"

"Daren't do anything that might cast suspicion on your cover," Sheklov cut in. "Sure, we understand just how tough security can be over here. But what's your response to the news that some American city may well be converted into raw energy in the near future?"

A haunted expression came and went on Turpin's face, as though for the first time in years he was reviewing the implications of setting off twelve thousand megatons of nuclear explosive. He said, "You mean the Chinese have—"

"Chinese, hell. The Chinese don't have a total-conversion reaction! Nobody has it, down here."

Understanding began to turn Turpin's cheeks to grey.

"Yes," Sheklov said with a nod. "Out near Pluto we've met—someone else."

IV

WHO?

Well, one thing—so Sheklov had been told—was definite. They couldn't be from this part of the galaxy, or even from this part of the cosmos. Because their ship sparkled. Even at the orbit of Pluto it was continually being touched by dust particles. On contact, they vanished into energy. Which demonstrated that the vessel, and hence by logic the system where it originated, must be contraterrene.

The aliens didn't seem to mind. Apparently they could take care of that problem. They could take care of the human race just as easily, if they chose.

Or, more precisely: they could arrange for the human race to take care of itself.

"They're far ahead of us," Sheklov said when Turpin's grey face had started back towards its normal colour. "We're afraid of them. So far we haven't managed to communicate anything to them, although we've been trying for more than three years. Somehow or other we *must* establish rapport, because if we can't convince them we're fit to get along with they're not only able but apparently willing to set us back a thousand years. In the way I suggested—by turning an American city into energy."

"If you can't communicate with them, how do you know?" Turpin snapped.

"The problem is strictly one-sided. They proved that they know a great deal about us, by projecting pictures in a gas-cloud floating in space. The experts say they must have generated localised artificial gravity-fields to create their images, then excited them to radiate in appropriate colours. We aren't within centuries of such techniques."

Contraterrene... Implying that anything they launched at Earth would boil its entire mass into energy—and what hope was there of intercepting the missiles of a species which must be more advanced by millennia than mankind? And they knew about "the world's most perfect defensive system." Inasmuch as any clear information could be deduced from the images they projected in their gas-clouds—a series of still pictures, with incredibly fine detail—they were having second thoughts about opening formal relations with mankind. One could guess that they didn't approve of a race which was capable of destroying its own members.

So now problems which had gone unsolved for generations *had* to be solved. There was no way of predicting when the aliens' patience might run out. When it did, they could—and maybe would—pitch the human race back to the caves. There had been one final picture which rankled in Sheklov's memory; naturally, he had studied photographs of them all. And that one showed a dirty, mis-shapen, but recognisable man, wrapped in a raw animal-hide, waving a stone axe...

He who is the same to friend and foe, and also in honour and dishonour, the same in heat and cold, pleasure and pain, free from all attachment...

With overtones: "who doesn't give a damn!" But that was an impossible ideal. Sheklov checked the thought, because Turpin was asking him another question.

"So you think someone here might be able to communicate with the aliens? But without explaining the real reason, I couldn't get funds for research into the problem, and—"

"You misunderstand me," Sheklov interrupted. "If the solution were technical, we'd have licked it by now. What we want is... I guess you'd say a new attitude of mind."

Turpin shook his head, confused. "Well, we do have some pretty competent psychologists on the payroll!"

A picture arose in Sheklov's memory: old Bratcheslavsky, cross-legged on a bare floor, fingers yellow to the second knuckles with cigarette-stains, saying, "Do this without preconceptions. Vassily. Ask the questions when you get there." Behind him, through the window, the white towers of Alma-Ata turned to grey by winter overcast.

Sheklov said, "One thing I was told I should ask you as soon as I arrived. What's a 'reb'?"

"Reb?" Turpin echoed in an astonished tone. "Why—why, a reb is a good-for-nothing, a dropout, a parasite. Someone who refuses to work and lives by scrounging. They come in two sexes: 'johnnyreb' for a boy, 'jennyreb' for a girl. Why?"

"You mean they're beggars?" Sheklov groped.

"I guess so. Most of them don't even have the get-up-and-go to turn thief. You see them all the time on the Cowville shore of New Lake; there's some sort of colony over there. Just sitting! Just staring at the water and the clouds."

"Meditating?" Sheklov suggested.

"They use the word for an excuse. I don't believe it."

He seemed to feel very strongly about rebs, Sheklov noted. He pondered a while, then murmured. "A kind of saddhu?"

"What?"

"Saddhu. An Indian holy man. Lives by begging."

"Nothing holy about a reb!" Turpin rasped. And, suddenly conscious of the ferocity of his tone, added. "What in the world made you ask about rebs?"

"Curiosity, that's all," Sheklov lied. "Of course, back home we don't have people like that."

Turpin gave a satisfied nod. That, Sheklov deduced, must be one of the things that was still sustaining him after a quarter-century: the belief that what most offended him in the society of his adopted country was elsewhere unknown. The grass is always greener—as it were.

Whereas I...

Looking down as the superway crossed a tall viaduct, he spotted another of the isolated townships which it bypassed: this one brand-new, sparkling in the morning sun, alive with cars like multi-coloured maggots as the breadwinners of the community left for work. It raced rearward, dwindled, was followed by another: lush, luxurious—but mass-produced, people and all.

Suddenly uncaged in his mind, the doubts and disbeliefs he had dutifully tried to conquer came striding back with echoing, lead-heavy steps.

There is no wisdom for the unsteady and there is no meditation for the unsteady and for the unmeditative there is no peace. How can there be any happiness for those without peace?

Are all human beings mentally deformed? Why else should they think in negatives all the time? Health is more than the absence of overt sickness, sanity more than the absence of dangerous psychosis. Peace too must be more than the absence of a shooting war. Peace must be...

No use. He could sense it, recognise it as possible. But he could not make it real in his mind. He had seen people who were apparently at peace—there was the kicker—but he had never accomplished it himself.

Anyway, if you do reach that unscalable pinnacle, what about the rest of the world?

He almost cried aloud, in anguish: he almost asked, *How long before the world is cured of finding patchwork solutions to single problems—solutions that generate problems in their turn? It's bad enough Back There, but here...*

Men assembling in the cold morning light to tear up a road with pick and

shovel so it could be re-laid by a machine!

America, of all countries! he mourned silently. *Why did they send me to America?*

When he was young he had spent three years in the India which had ultimately chosen to preserve its heritage, rather than accept aid conditional upon alliance with one of the great power-blocs. There, many people were sick, most were ill-fed and ill-housed.

And some were happy.

How long before we start looking for a way of life in which problems don't matter?

Turpin was still making would-be-helpful suggestions, proposing to invoke the resources of his company, its psychologists, its computers, its enormous data-banks. It seemed he had completely missed the point.

Not that Sheklov felt he understood it properly himself.

Listening, he came to suspect that Turpin was simply uttering polite noises. News of something "out near Pluto"—even if it could distort the totality of human experience, eastern and western—had no concrete referents for him. A generation of isolation, half-voluntary, half-enforced, had coloured the thinking of his adopted countrymen, of whom he was so contemptuous; inevitably, though, in order to protect himself among them, he had had to let his own thinking be conditioned by their example.

In which case...

As a loyal agent, Sheklov found the conclusion he was being driven to repugnant. Yet he had to face it. He was compelled to wonder whether those who had sent him here genuinely be-

lieved they were dispatching him on the trail of a clue, or whether they had merely lapsed into the pattern of the old days, when America was the wealthy rival, to be first emulated, then surpassed.

But that attitude was obsolete. The paths of the two blocs had diverged a long way now.

Though, of course, since they were both branches of the same species, the people who lived under the aegis of these supposedly irreconcilable systems coincided in surprising ways. If he were to go into one of those handsome housing developments overlooked by the superway, would he not find, as he would back there, people who contrived casually to mention their courage in moving to a building which wasn't blast-proof? And kept a year's supply of food in the freezer anyway?

Of course I would.

They would take pains to impress him with their loyalty, their right thinking; they would have the proper photographs and flags on display. Small matter if they were afraid of some impersonal, august, omniscient Security Force, rather than of the cold consensus of their neighbours—the effect was essentially the same. They would strive to be dedicated pillars of their community, set on raising their children to follow in their footsteps, endlessly quarrelling with them when they scoffed or asked unanswerable questions.

But he had seen a man under a tree: thin, wearing only a loincloth, one eye filmed with a cataract, who spent the day in ecstatic enjoyment of the sun's heat on his skin, and at nightfall fumbled in the bowl before him and ate

what he found. There was always something in the bowl.

After that he had to be Donald Holtzer again, and Holtzer was not troubled by such thoughts.

V

ALMOST WITHIN SIGHT of Lakonia, the Banshee caught up with a shower of rain, quite likely the same one which had provided Danty with that puddle where he had found mud for his face. At the first drops the wipers churred into action and the windows attempted to close. But Danty, lost in thought, was sitting with his elbow on the passenger door, and the automatics uttered a whine of complaint.

Rollins snapped at him. With a murmured apology he moved his arm. The glass socketed home in the spongy seal around the roof, and Rollins breathed an audible sigh of relief.

"You wear lead, hm?" Danty suggested, and gave a pointed scowl at the counter on the dash next to the gun. Its needle was well down in the white sector. By reflex Rollins also glanced at it, and then flushed, indicating the road ahead slick with wet as far as could be seen.

"You want to get soaked, get out and walk!"

He looked and sounded as though he fully expected the counter to zoom into the red any moment.

Danty shrugged. So it wasn't rational to be that afraid of rain; there was Sr-90 and C-14 in everything you ate and drank, and unless you wore lead underwear you were constantly at risk

from the long-life gamma-emitters like Cs-137. But, as he reminded himself wryly, Rollins was far from the only person in the world who did irrational things.

Maybe he did wear Koenig's, at that. He wasn't apt to admit it to a stranger, though.

Then the superway rounded the shoulder of a hill, and he caught his breath. Still in bright sunlight, by a freak of the rainstorm's course, there was Lakonia laid out before them.

Symptom of a terrible disease, like the "hectic flush" of tuberculosis, conveying the illusion of vigorous health, or like the frenzied mental brilliance of terminal syphilis? Some authorities regarded it that way. They claimed that Lakonia was an ersatz, a surrogate; this city built around an artificial sea, they said, was a palliative to dull the guilt suffered by those who had poisoned first the Great Lakes, then the rivers, and ultimately the inshore waters of the oceans past the point at which a man could swim in them.

Yet in its way—and seeing it now Danty was the last person who could have denied it—it was a place of mad magnificence, a rival to the Pyramids and Babylon.

Its towers rose, white, purple, green and gold, to meet the sun: towers like stalactites, like poplar-trees; towers like stacks of coins, each offset on the one below; towers like spun sugar-candy, glittering, and towers like frozen waterspouts. High delicate bridges linked them here and there, slung on ropes of spun carbon-fibres seeming weak and thin as spider's webs yet capable of carrying cars nose to tail in both directions, and the thicker, ivory-

coloured single rail of the hoverline swerved and swooped from one to the next. And all these pinnacles admired their reflections in pure crystal water—moats around the towers' roots, canals planned to a scale beside which Venice paled.

In any case, Venice had collapsed.

Uniting all these waterways, the New Lake: man-made, spanning eight miles shore to shore, which gave Lakonia the first syllable of its name.

It was early yet, and there was no way of telling whether the nearby rain might not drift in that direction, but the bright mirror of water was alive—with swimmers, with sailboats, with powered launches towing water-skiers and man-carrying kites. At least, the nearside of the lake was swarming with them. Some mile, or mile and a half, from the shore, they seemed by tacit consent to turn back, to face again towards the high lovely towers and the artificial beach of white imported sand. It was as though on the further shore there was something they were afraid to approach. Yet, looking in that direction, an uninstructed stranger would have seen nothing more foreboding than a stand of tall dark trees, force-grown redwoods two hundred feet high, above which curled a faint wreath of smoke.

"You live in Lakonia?" Danty asked as the road slanted down.

"Yes." Rollins snapped, more of his attention on his driving now than at any time since Danty stopped him. Here the traffic was thickening like milk soured by lemon-juice. "And you don't. So where do you want to be put off?"

"Any hoverhalt will do."

"Sure you don't want to be run all the way home?" Rollins countered sarcastically. "If you have a home, that is."

"I get by," Danty said.

Rollins spotted a vacant parking bay and pulled over. The car stopped, rocking. Ahead was a hoverhalt sign, a blue illuminated arrow pointing up.

"Thanks," Danty murmured, opening the door. Rollins didn't answer. In another few seconds he was lost to sight in the river of traffic and Danty was dropping coins in the turnstile of the hoverhalt.

Five minutes, and the luxury and beauty of Lakonia lay behind him. He was beyond the forced redwoods and in the shadow—for a few seconds, literally, because it was as tall as the underlying rock would bear and looked far above the forty-foot level of the hoverline—of the Energetics General Building, four city blocks by five.

In the centre of Cowville, that huge squat bulk brooded like a queen-bee in her hive. It was the headquarters of the biggest single employer in the country, except government, and of course without government it could not survive. Sometimes Danty thought of it as a temple, the fane of the priests who served the god Defence.

Cowville was old. Some said it was the oldest city in the state. The insertion of that hulking building into its center had deformed it in a curious fashion, like the pressure of a wedge being hammered home in a block of wood. People—and the buildings they lived and worked in—seemed not so much to cluster around this focus of vast wealth, as to have been compressed by it, like garbage compacted

for disposal. They were prevented from expanding outside the original city limits by strictly-enforced ordinances, because nothing must interfere with the beautiful setting of Lakonia. Not all of them had come to seek work, or to take advantage of the money flowing freely around Energetics General at a time when half the states of the Union were depressed; some had come merely in order to live close to Lakonia, for the privilege of walking to the lake-shore and staring at its towers, focus of indescribable ambitions which they would never fulfill.

Even so there was little resentment of its existence. Lakonia had salvaged a beloved scrap of the American dream. At a time when people were losing faith in their older god, Business, because it had fouled the air and ruined the countryside and made the rivers stink, one corporation had created a new and lovely lake, whose water was purer than a mountain creek.

After that, over ten years, came the city: the most desirable place to live on the continent.

Meantime they shut away, behind trees, the original city of Cowville, and—apart from what unavoidable maintenance was called for to keep it habitable—let it rot. They were content to say, "You don't grow a rose without manure."

Yet, like the nearly-but-not-quite flavour of hydroponic food, life in Lakonia lacked something. A spice. A savour. "I remember it from the old days!" people claimed—then when challenged to describe it, confessed they couldn't. "Nonetheless," they maintained stoutly, "it was real! It can't have vanished completely!"

Therefore, now and then, they set off in search of it, and for want of anywhere better to start looking they came to Cowville, to the littered streets and the stores crammed with over-priced knick-knacks and the pre-Lakonia apartment blocks which had been sub-divided and sub-divided again. It was hard to find living-space in Cowville now. One could foresee an end like the ancient Chinese system of land-tenure, the ancestral holding split up among successive generations until a family was compelled to share a broom-closet.

If they looked in the wrong places they got robbed, or raped, or slashed with a bottle in a bar. But if they were lucky, or someone had given them the right advice beforehand, they learned to recognise landmarks—signposts, clues. A message on a wall, chalked up at midnight, at four a.m. washed away by rain. In a store, a handwritten notice: MEETING, followed by a date, a time, an address. In the window of an apartment, a cheap printed card: THINGS FOUND. Nature of the things not specified. TRACING AGENTS. PROBLEMS SERVICE. CASES UNDERTAKEN.

You could follow these signs if you chose. They led to another city altogether. They led to the city Danty lived in.

He left the hovercar at a halt on the roof of one of the city's oldest surviving buildings, a good sixty years old. It had seemed like a logical idea, when they extended the line around the lake, to use existing roofs for halts, but they had had to straitjacket the building with concrete beams when the recurrent vibration threatened to shake it

down. Now the beams served a double purpose, acting also as supports for an exterior staircase and for landings on three sides of the building. The interior stairways and the elevator shaft had been turned into shower-rooms and kitchenettes. There had been two apartments on the top floor of this building; now there were eight, entered by doors which had been regular windows.

In the remaining window of the apartment nearest the stairs, dimly legible through the wire-reinforced glass, a card said simply **CONSULTATIONS**. It was into this one that Danty let himself, with a key which he wore on a steel chain around his neck. It was a precious key; there were only two like it. It was risky to use a stock type of lock in modern Cowville, because so many people had complete collections of the American Lock and Vault Corporation's range. If you could afford it, you had one hand-made.

The apartment trembled a little as the hovercar he'd arrived on accelerated towards its next destination.

"Magda!" Danty called as he shut the door. There was no answer. He hadn't really expected one, unless she was in the toilet.

The apartment consisted of one large room, along two walls of which couches that doubled as divans had been built in, plus an alcove cut off with a curtain, a shower-cabinet, and a kitchen made of fire-proof board. As always, it was untidy, with a dozen books lying around open, a stack of sheets torn from a notepad in the middle of the one large low table. He glanced at the latter to make sure none bore a message for him, but they were covered in indecipherable technicalities.

He swore under his breath. Of course, she did have many other calls on her time, but you'd have thought that today . . .

His resentment died. Maybe it was better this way. Maybe he needed a chance to think over what he had done. Until he was in sight of Lakonia, he'd been able to mute knowledge of his own actions in his mind, making them distant and dreamlike. Now they were throbbing and pounding in his memory.

More to distract himself than because he was hungry, he brought a soyburger and a carton of milk out of the freeze, switched on the TV and sat down to eat in front of it. He caught the tail-end of the weather forecast, and then followed the day's counts: pollen, RA—high beta, low gamma—KC's, Known Carcinogens, SO₂ and the rest. But he wasn't paying attention. He was thinking about the man from the sea.

Images came to his mind; he pictured the disturbance the stranger would cause, like a small, very hard pebble dropped into a loose-journalled complex of machinery. Slack would be taken up here and there in its bearings. Bit by bit it would become possible to deduce who he was, why he had come, what he hoped to achieve.

And then, perhaps, something would have to be done.

"Do thou therefore perform right and obligatory actions," he quoted to himself under his breath, "for action is superior to inaction."

With a sudden violent gesture he thrust away his plate. He linked his brown thin fingers together so tightly the knuckles paled. His teeth threat-

ened to chatter, so that he had to knot his jaw-muscles to hold them still.

*Magda! For pity's sake hurry back!
I'm scared!*

VI

LORA TURPIN HAD had all she could take, and said so to her mother. Her mother, with her usual infuriating white satin calmness—out of a bottle with "White Satin" on the label—called her a misbegotten moron and suggested that radiation must have affected the ovum from which she was conceived. That finished the discussion. Theatrically Lora stormed out of the room, out of the apartment, out of the building, and into a hovercar going anywhere.

If it had been night, she would have driven; there were five cars in the basement garage she could get the keys for. But she hated sawing through slow day-time traffic, and what was more she was forbidden to ride the hoverline, which was why she did it when she was in a bad temper.

This time it didn't lead to the anticipated result. Naturally, because she was very pretty, several men leered at her, but they were all reeky ancients, at least forty, and the only hand which did try stroking her bare waist belonged to a fat mannish woman who got off at the second halt. It was around then that she realised, as the redwood trees loomed ahead, that this car was heading in the wrong direction. She'd meant to get off at a halt by one of the yacht-pools and pick up a boy with a boat. She hadn't had a boy for over a week.

Almost, she made to leave the car. But she changed her mind. What the hell? She'd never ridden a Cowville line to the end.

Curious, she watched the squalid city slide beneath, and then around, as the line approached the monstrous mausoleum of Energetics General, and then beneath again: an area of lower buildings, harking vainly back to the foundation of the city, to the pioneering image of the original cow-town. A mobile illuminated figure shamelessly copied from "Vegas Vic" beckoned customers to a block crowded with twenty-four-hour bars and sex clubs. That passed behind too, and the line descended to ground-level—or, more likely, the ground rose to meet the line.

By the time a mechanical-sounding voice announced the terminus, the city was petering away to shabby tenements intermingled with warehouses. A distant roaring indicated that she was close to the airport through which EG dispatched its products, but that was out of sight behind a hill. There was a thick industrial stench in the air.

Uncertainly, she got out, last of the passengers to do so. There had only been three others in the car, a tired-eyed black woman and two black kids about twelve. Litter crunched under her sandals as she stepped on to the platform. Before her extended a street of grey buildings. Signs here and there identified small manufacturing companies making sanitary tampons, plastic cups, door-furniture. At the end of the street was a scrapyard where a tall crane was picking up metal on a magnet. The only person visible was pushing a hand-truck laden with garbage-cans, a sour-faced black.

She hesitated, glancing around. Nearby was a sales kiosk offering candies, cigarettes and porn. Its display window was of the old-fashioned intermittent-mirror type, and she caught sight of herself in it as it went into the reflecting phase. She stared with annoyance at her image. Her hair was exquisite, honey-gold; her face was oval, though not so perfect as to be dull. But there was an ill-tempered twist to her mouth, which she detested, yet which she could not help. She felt so furious with the world today.

Of course, she had come straight out of the apartment in what she happened to be wearing: playtop, shorts, sandals, and literally nothing else. It had been sheer luck that she'd had a pocketful of change. It would have been unbearable to go back for her wrist-purse.

Then the window cleared, and she realised she was being stared at by the owner of the kiosk, a fat middle-aged black. A tooth was missing in the centre of his grin. She spun on her heel at random and started down the street. She was just a little afraid. Yet the sensation was somehow stimulating. She felt she needed to do something terrible. Something that would shock the living shit out of her parents. Anything.

The concept took root in her mind, without words. It had the appeal of the suicide's note: "You'll be sorry for what you made me do!"

And they had made her do it, hadn't they? Grandmother with her wood-rasp voice and her endless condemnation of young people today—well, she'd endured that all her life. But add in the nuisance of this newly-arrived Canadian, Holtzer, and the information that her abominable brother Peter was

going to be crowded into her bedroom—they got on each other's nerves, and he was a reeky waster, and he'd left it until this morning to admit that he'd overspent his allowance and couldn't afford a hotel while Holtzer was here . . . Not that it was Holtzer's fault, of course; he seemed rather nice, with his square face, curly brown hair, and ready smile. But—damnation! If there was only one guestroom, and Grandmother was in it, and Dad insisted on accommodating this Canuck, why couldn't he move in with Mom? Lots of married people had gone back to sharing a room!

When she suggested it, her mother had given her a long steady stare. "I shouldn't mention that to your father if I were you," she'd said.

"Well, aren't you married?" had been Lora's caustic retort. And that began the row which drove her out.

She realised suddenly that while she was brooding a trio of young blacks had appeared at the end of the street, near the scrapyard gate, and they'd spotted her. For an instant she was minded to rush back on the platform; the car was warming up for its return trip. Then she realised this was just the kind of thing she was after. She'd never had a black boy, let alone three of them at once.

Pausing after getting out of the hovercar, Magda Hansen looked down at the narrow concrete landing outside her apartment. There was a woman there—smartly dressed in dark blue, age indeterminate, heavily made-up, obviously wealthy and more likely to live in Lakonia than Cowville—who was wavering back and forth before the door. She poised her hand to press the

bell, drew back, looked at the card saying CONSULTATIONS, made to turn away, and went through the whole cycle again.

Magda hoped fervently she would give up. But she didn't.

"Are you—are you Magda Hansen?" the woman said hesitantly, seeing her come down the stairs from the hover-halt.

"Yes." Magda shook back her coarse black hair and felt in her pocket for her key, the twin of Danty's. "Why?"

"Well—uh—I'm Fenella Clarke. Avice Donnelly said I should come to you. She says you're absolutely wonderful."

"Kind of her," Magda sighed. "So what do you want?"

"Help," was the pathetic answer. "And I don't know what kind." She began to twist a platinum wedding-band around and around on her finger. "It's—it's the way it was with Avice, more or less."

It would be. But Magda kept her face straight.

"So I thought—uh—I ought to talk to you, too."

"Very well. Shall we say Monday at three?"

Mrs. Clarke's face fell. She said, "I was hoping . . ."

"No, I'm sorry," Magda cut in. "You must know from Avice that I can't work a one-day miracle, and I have someone waiting inside right now."

"But my husband . . . !" Fluttering her hands. "You see, he's gone to the West Coast, but he comes back Monday!"

"He wouldn't approve?"

A helpless head-shake. Yes, that figured. If he was typical, he'd say at once,

"You're not to waste my money on a quack!"

"Perhaps you'd rather leave it until the next time he's away," Magda suggested. "Otherwise Monday really is the earliest I can offer."

"Very well." Mrs Clarke sighed, and turned away.

Danty was lying on one of the couches, eyes closed. Thinking him asleep, she entered quietly, but he heard her and called a greeting. She blew him a kiss and headed for the shower-stall. As she began to hang her clothes on a chair, she said, "How was it, Danty? Was it right?"

"Too right," he answered, frowning. "A man came out of the sea. And there was another man waiting to take him away in a car."

"Wasn't that what you expected?"

"Yes!" Danty sat upright with a jerk. "Yes, exactly! Magda, it's getting so accurate, I'm worried!"

"You'd be a lot more worried if you'd gone to that much trouble for something which didn't work out," Magda said, and stepped into the shower. For the next couple of minutes the noise of water was too loud for conversation; besides, another hover-car pulled up and the building trembled.

Then she emerged, wrapped a towel around her, and sat down facing him. She said, "I guess you've had enough time to make sense of what you saw?"

"Not really," Danty muttered. "What do you think?"

"An East Bloc agent being landed?"

"In a reserved area? Under the nose of radar and nuclear missiles? Jesus, why? For all their talk of security, the borders aren't tight—why not bring an

agent in through Alaska, or Canada? The Cubans send theirs in through Mexico, don't they? Hell, the guy came out of the biggest submarine I ever saw, and if I—"

He stopped dead in mid-sentence. Magda tensed.

"Go on!" she encouraged.

He gave her a blank, helpless stare. "I . . . Oh, I think sometimes I shall go insane! Do you know what I did? When I got through the fence, I—I *felt out* the equipment. I found the central switch-house, this little round thing made of that artificial ruby they use over in Lakonia, and I sneaked in and turned everything off. It's sort of complicated, but when you do it in a certain order . . . Well, never mind; I can't explain the details.

"But when I came away I *left* the site turned off!"

"Then they'll find out!" Magda exclaimed. "They service those sites all the time—you see the helicopters taking off from the airport!"

"Yes, of course," Danty said, staring miserably down at his hands. "And I can feel that they'll find out soon. I had a reason for doing what I did, I'm sure of that. But I'll be radiated if I can remember what it was!"

"You're shaking, baby!" Magda said. "Here! Let me wind you down." She rose and began to strip off her towel.

"Uh-uh," Danty sighed. "It goes on."

"What comes next?"

"I'm not sure. I only feel I have to be somewhere—out by the scrapyards on the west end of town. I'll know the spot when I get there." He checked his watch. "In fact it's about time I got started."

"Have some pot, at least—or a trunk, if you're really in a hurry!"

"No, I daren't risk it. I have to be as keyed up as I can."

She stared at him for a long moment. Before she could say anything else, however, he had read her mind.

"You think I'm going to burn myself out, don't you?"

She gave a nod. A very slight nod, as though limiting the gesture could soften the truth behind it.

"Yes. Yes, I think so too," Danty muttered. "But not doing what I feel I have to do—that would be worse." A faint smile followed the words. "But thank you anyhow. If there wasn't someone I could talk to, someone who cares about me, I'd have gone insane long ago."

He rose, stretching, "Although it's arguable, I guess," he added, "that I already am crazy. Poor Magda!"

"What?"

"Poor Magda, I said. Landed with one case for which you can't see any hopeful outcome!"

She pondered that, then shook her head. "No, that's not true. You may burn yourself out, that's a fact. But it would be a very special kind of burning. Goodbye, Danty."

VII

"**W**HAT CH'WAITING FO?" Potato-head muttered, staring at the addle cock blonde with the bare chowbag. He nudged Josh Tatum.

"Poke me one more," Josh said, "I cut out yo' Idaho eyes. She walking this way? She climbing walls? Shee-it."

Josh wasn't a reb and if you'd called him one he'd have carved you for it. They were tight on guns in Cowville

but knives, everybody had knives. He was slick from neck to heel in plastic blacker than his skin, and shinier, and his scalp fuzzed an eighty-eight force-grown natural. Same with other, Shark Bance. Potatohead was shaved and ashamed. But something wrong with the follicles.

"Lakonia," Shark said under his breath.

"Where the shit else? I know her."

"What?"

"Name? Name? Piss her name. Peg it, peg it! Chow bare, zip-crotch shorts—eyes, use yo' eyes!"

"Pegged," Potatohead said. "Po' li'l rich, due fo' kindah-a surprise." He grabbed Shark's hand and kissed it.

"Kill it! Wannah-a see that? She grunt pig! Spread an' bar-a walk. Makun quick!"

"Inta scrapyard?" Shark inquired.

"Scrapyard, yea."

In spite of her resolution Lora felt nervous as she approached the young blacks. There was something so statue-like about them: all three tall, all three dead-faced, all three in that strange tight muscle-hugging plastic... She liked to feel a boy's skin before she let him unzip the crotch of her shorts, which was why she preferred the beach, or in winter the dansoteks where it was always too hot for heavy clothing.

But this was the thing she had set her mind to, so she kept on going.

The nearest of them, with the shaven head, stepped into her path. She smiled sunnily at him and said, "Hi!"

He looked at her with eyes as dull as pebbles. Then he reached out and touched, not her bare arm, but the fabric of her playtop. Meantime the

one beside him, marginally the biggest, examined her critically from top to toe.

"In there," he said after a couple of heartbeats, and jerked his head towards the scrapyard.

She was taken aback. This wasn't what she'd expected. There should be—well, a bit of chat. Banter. Joking. Some sort of preliminaries!

But they had fallen in around her like military police escorting a deserter, and were forcing her towards the scrapyard gate. There was a gatekeeper's hut: no one was in it.

Huge clangng noises, and a sulphur stink. Horrified, she found herself shut in by walls of ruined cars, rusty bathtubs, mounds of cans crushed into polychrome lumps, while underfoot she walked on painful glass.

"I—" she began to say, and they rounded a corner among the piles of metal and were out of sight of anyone.

"Value her," the tallest black said, and the bald one confronted her and took her wrist. He inspected her watch.

"Saw, Josh?" the third said. "No purse!"

"Saw," the tallest said. "Zip up, Shark. Well, Potatohead?"

"Piss and shit! Japanese! Worth around eight-fifty!"

"Foreign, um? Ah-hunh! Anna clothes?"

"Three-fo' hunnad inna sto'. Top getcha mayba fifty. Shorts widda zip-crotch, dustin'-rag."

"Takun fo' pock't. I see coin. Strip-pun, addle." As though by magic a long knife appeared in Josh's hand and touched Lora's bosom with a cold caress.

"But—but what . . . ?" Words choked her. It wasn't that she didn't understand the order (addle: adolescent; they said

that in Lakonia, too). She didn't understand the situation.

Slowly, and with immaculate diction, Josh said, "Strip, cock. We don't want to get blood on those clothes."

She stared at him for a terrible empty moment, thinking: *cock means Caucasian, and that's only used by . . .*

It dawned on her at long last what they meant to do. Rob her, and kill her, and hide her body among the scrap.

"Knahf, blabboh. Droppun knahf."

A voice from nowhere. Josh whirled around, eyes vastly wide. He, they, Lora spotted the speaker almost in the same moment: high on top of the pile of scrap overlooking them, a dark face peering down, cheek cuddled close to the significant tube of a rifle.

"Knahf!" the voice repeated. "O' taken ow'yo' han' wiffa slug, blabboh!"

There was an eternity of frozen silence. All Lora could think of was that only one black man could call another blabboh—"black boy"—and survive.

Then Josh, mouth curled as though he had bitten a lemon, opened his fingers and let the knife fall.

"Addle cock!" the stranger said sharply. "Back slo"—tutri pesses—so'sa fahn. Narrunda co'nah—fahn again!"

As in a dream, Lora reacted to the half-understood order, backing around the corner of the stack of scrap.

"Okay," the gunman said, and then added, more loudly and with a forced blabboh intonation: "Ah seeah! Slongzah seeah Ah c'nitchah! Mango blabboh, mango!"

A gesture with his rifle. And they went.

Half a minute later, while Lora was sobbing into her hands, a tug on her arm. "Move it!"

Gone the blabboh accent, but the same voice. She opened her eyes to see her rescuer—lean, young, dark, not as black as her captors but black nonetheless—tossing his rifle aside.

"But they might come after us!" she cried.

"Sure! I said move it, didn't I?" Catching her by the arm and literally dragging her along.

"But the gun—!"

"Not worth a fart. Picked out of a stack of them over there. Military surplus. Empty! Will you move?"

He led her stumbling through the awful man-made desert of the scrap-yard, to a gap in the perimeter fence, down a narrow alley . . . By that time she was gasping for breath, and barely registered where he was taking her. Then around a corner, and after a quick survey of the street in both directions—just such a street as she'd emerged on to from the hoverhalt—at a quieter pace for another few hundred yards, his arm around her waist now, his hand companionable on her bare skin.

"It's over now," he said, close to her ear. "But you got a scare, that's for sure. You over the legal?"

"Uh . . ." For a moment she didn't understand, although the coarse blabboh accent had faded from his speech and he was speaking precisely as might any of her friends. Then she saw a bar-sign ahead. Yes, a drink. A stiff shot of—anything. She said so. Her voice not only sounded but felt like someone else's.

In the bar, a couple of black men at the counter gave them a dull once-over, then reverted to their liquor. He brought her brandy, and beer for himself. Sitting down opposite her

across a table with a chipped plastic top, he said, "Drink it. Then breathe as deeply as you can, ten times. I'll wait."

It worked, somehow. Maybe it was the confidence in his tone. Her heart, which had been slamming to be let out through her ribs, slowed to a more normal rate, and she was able to look at her new friend properly. Some tune she didn't recognize battered her ears; she had only just realised music was playing. As though the episode in the scrapyard had not happened she found herself thinking: *yes, I hoped to meet a black boy like this, tough, lean, crooked smile, graceful-moving . . .*

And—?

There was a stern reproach in his eyes. He said, "When you come here, learn to pick your kicks."

"I . . ." She swallowed hard. "I didn't think they . . ."

"Yea, yea," he cut in. "But—shit! None of them three looked twice at a girl in their lives, 'cept maybe to peel her down!"

She looked miserably at her empty glass and nodded.

He gave his crooked smile again and patter her hand. "So okay, no harm done. Just don't make the same mistake twice. By the way, my name's Danty."

"Mine's Lora," she said distractedly. "Lora Turpin. Uh—"

But Danty had tensed. He leaned forward. "Not Turpin of Energetics General?"

"Why . . . Why, yes. Do you—?"

"Know him? Shit, no. Heard of him, though." And in the manner of an afterthought: "Friends of mine work at EG."

Which she had imagined to be all of Cowville, the building to incorporate



the city. She touched her bosom where the point of Josh's knife had rested, and a shiver racked her.

"You don't? No? What *do* you do?"

"My best to be myself," Danty murmured, and sipped beer.

Recognition signals. Landmarks. Likeknowing(becauseaTVprogramme had said so with authority) that only queer blacks close to farming stock called white teenage girls "addle cocks." She said explosively, "Are you a *reb*?"

"I guess I wouldn't cross the road to contradict you."

She stared at him, and went on staring. Now and then, the other side of New Lake, the son or daughter of some wealthy family put on the *reb*-style pose, and that was where it stopped—just a pose. According to the social history she had been drilled through in school, every generation for centuries had had its *rebs*, clear back to the wandering students of the Middle Ages. But something kept on going, fed from a source she couldn't understand. Once, in an essay, she'd spoken of a humanistic counterpart of divine discontent—the phrase borrowed from a book not on the curriculum—and she'd been marked down two grades for saying it.

"You?" he was asking. "You in college?"

"Uh . . ." Remembering with an effort. "I go to college in the fall. Just finished school."

And what would it be like, there at Bennington?

An odd feeling, as though she were two people at once. At home she had been allowed to drink since she was fourteen, so it couldn't be the brandy which had hit her. It must be shock.

She half wanted to cry, and half wanted to laugh hysterically.

"And what brought you here?" Danty said.

So she told him: words flooding out, tumbling over each other, confusing the argument she wanted to frame, until she was certain he must think her mentally deranged. Yet he sat there, and nodded now and then, and heard her out.

He said eventually, "You like to night-ride, I guess."

"Oh, yes!" (Black sky, black road, the universe condensed to a pattern of lights, the ever-present expectation—hope?—of "instant death": *just add blood*.)

"Yes." Nodding. "It's the idea of going somewhere. To look for something you might not recognise if you found it. Only the places you most want to go, they won't let you."

She was about to say that was *exactly* what she felt, when she realised with a pang of shame that she'd clean forgotten to tell him something very important.

"Danty! Oh, Jesus! I didn't thank you!"

"Not to worry."

"But—!" Now she was shaking all over again, from a different cause. "But you must think I'm awful! And it was fantastic what you did, really incredible! Danty, you're kind of a terrific person!"

"I'm myself," he said, and drained his glass.

"But—oh, *shit*!" Well, it was the only way she knew to say thanks properly, so with her hand hovering over her crotch-zip: "Do you have somewhere we could . . . ? You know!"

"Place but not time. Thanks all the

same. Shall I show you to a hover halt?" Making to rise.

No, it can't stop here! I mean: SAVED MY LIFE! "No, wait!" Mind racing. And then inspiration. *Oh, yes! Just the right bit to blow the minds, turn up with a black reb!* "Hey, look! We have this big party for tomorrow night, this real stand-up-and-grin-if-it-chokes-you affair! Can I send you an invitation? I mean—oh, Danty, I do want to see you again!"

He nodded and settled back in his seat, pulling a pen from his pocket.

"Why not? Here's my address, inasmuch as I have one."

VIII

FEELING ALMOST ASHAMED of herself because she hadn't been this excited about a party for years, Lora took special care before her mirror, selecting her best makeup and perfume, then deliberately putting on a dress her father hated, a harlequin rig of lozenge-shaped bits of cloth tacked together only at the corners which showed as much of her as it concealed.

No doubt that meant that some of Dad's friends would try to feel her up, and she didn't intend to put out for reeky old turds like them, but if Danty *did* show . . .

"Here's my address, inasmuch as I have one." *Wow.*

The house-phone rang. It was her mother.

"Lora honey, would you fix me a drink?"

She stamped her small foot. "Can't you send Estelle?"

"Well, she's fixing my hair right now."

"Oh . . . ! Oh, all right." In a sullen tone. But she was all through dressing, and Peter might show up any minute, so getting out of the room was not a bad idea—

And here he came, panicking, starting to throw his outdoor clothes all over everywhere as usual. She headed promptly for the door.

"Don't let me drive you out, sister mine!" he exclaimed. "You saw me take my pants off before, didn't you?"

"Going to fix Mom a drink," Lora said, sweeping by.

"Me too!" Peter cried. "I'm in a rush!"

"That's your fault," Lora snapped, and strode away.

The nearest liquor cabinet was in her father's room. The room was empty. She mixed a gin atomic for her mother and a weak Bloody Mary for herself, and went next door where Mrs. Turpin sat naked at her mirror while her French-Canadian maid set out accessories to go with her radion gown.

"Thanks, honey," she said in a strangled tone due to the need to let her lip-shade dry without wrinkling. "Put a straw in it for me, Estelle!"

"Mind if I drink mine here?" Lora said. "If I go back in my room Peter will grab it. And by the way!"

"Yes?"

"You couldn't arrange to have his drinks watered tonight, could you? He's bad enough sober. When he's drunk—Christ!"

"Oh, he won't try and rape you, if that's what you mean," her mother said calmly.

"Mom! That's beyond joking!" Lora gasped.

"Unfortunately it is. But the fact stands: you're a girl. And, come to

think of it, you seem to want everyone to be absolutely certain. Are you seriously going to wear that bunch of rags, if you can call it wearing?"

"Why not?" With a gulp of her drink.

"Well, your father—but I guess that's why you put it on. More important. I asked Reverend Powell to be here sharp on time, and I don't want him to see you dressed like a whore."

"Don't make me laugh! He made a pass at me last time he was here, the slimy slug!"

"Well, he doesn't pretend to be above temptation—that's one reason people like him. But don't let me hear you call him a slug again, understood? Or I'll forget you're eighteen and whop you blue. I won't have you bad-mouthing a minister. And one more thing! Don't spend the evening like you usually do, moping around some plastic-headed boy. Mix! Talk to people—"

"I'll spend the whole radiated night with anyone I choose." Lora said, and slammed the door.

After that, she didn't really want to join the line-up at the entrance to the party hall. That was a room about sixty feet by eighty, shared between their apartment and the next; there was one on each floor of the tower, and doors off it were unlocked according to which family were the hosts.

But she was afraid of missing Danty if she didn't.

So she waited until her father was busy greeting an early guest, then darted into a spot beside Holtzer, thinking that even if Dad did want to slang her for wearing this dress he'd hardly do so in a stranger's hearing. She was right, and escaped with a mere scowl.

Holtzer, on the other hand, looked her over thoughtfully and at leisure, and said at last, "You look lovely, Lora."

"Well, thank you," she murmured, because he'd said it in a tone that made her believe it. She relaxed—but only for a heartbeat or two, because here suddenly came Peter in a hideous party-suit of yellow lace and stinking to the sky. He rushed to his mother, lying about how he hadn't been able to get ready sooner because his reeky sister was underfoot, but Mrs. Turpin was used to that and froze him fast.

"It's your preening and primping that takes the time!" she snapped. "Get yourself a drink and shut up!"

Instantly furious, Peter was about to scream back at her, but that was the moment when Reverend Powell arrived: a fine-looking man with a commanding presence which had made him the highest-paid TV evangelist in history. And, of course, Peter pounced on him.

Well, that's one way of avoiding the two people I least want on my back . . . Lora sighed, and found Holtzer looking at her again. This time he winked, and she grinned back. Good to know there was one other person here who wasn't dazzled by this parade of notables, these generals, admirals, senators, TV stars and other slugs. Plus, naturally, the whole of the EG Board.

But she had to be polite, for the time being.

The crush increased tremendously within minutes. Even in Lakonia people had got out of the habit of arriving at parties late and staying late. Going home after midnight wasn't as risky here as in New York, Washington or

LA—where most parties nowadays were held in the afternoon—but the pattern was contagious.

Abruptly the racket of conversation dwindled to a buzz, and Sheklov, surprised, glanced towards the door. Two men with blue jowls and stern expressions were coming in. They ignored the host and hostess, but walked silently around the assembly, sharp eyes piercing and probing.

"Well!" someone he didn't know said beside Sheklov. "So Prexy is coming!"

"How do you—?" Sheklov began, and then put two and two together. "Oh. Secret Service?" A chill touched his nape.

"Yes," the stranger said importantly. "Those are Crashaw and Levitt. They're alleged to have by heart the entire CIA and FBI files on subversives. See how tense the Turpin girl is? Worried in case they tell Prexy not to come in!"

Lora caught that and glanced over her shoulder with a scowl. *Fool!* she thought. There was someone she was far more concerned about than Prexy—and here he was!

She had had vague visions of him arriving with a dozen reb friends, leaping with a whoop and a holler into the middle of this stuffy crowd and blowing every mind for miles. But, instead, he was quietly taking in the scene from the threshold, neatly if not expensively dressed in wine-red, not seeming at all out of place except that his complexion was the darkest in view.

He saved my life! she thought again, savouring the solidity of the concept, and ran to kiss him. Several people noticed. They were meant to.

Sheklov was staying close to Turpin. That suited his rôle as a stranger who knew almost no one, but also it was safer, because although his briefing had been thorough he was not yet primed with current gossip.

He was impressed. Turpin's assimilation was unbelievably complete. People were present who made the headlines simply by catching a head-cold. And even those secret service agents had looked Turpin in the face, never suspecting that he had been born in the *other* Georgia—that he had grown up answering to the name of Yashvili—that it had taken four years' planning and three deaths to turn him into Lewis Raymond Turpin, known inevitably as "Dick" . . .

Sheklov suddenly recalled something which Bratcheslavsky had repeated many times during his briefing: "Don't let his assimilation put you off. Bear in mind it saved the world!"

Ture enough. Every circuit in "the world's most perfect defensive system" had been known to Turpin for years. He didn't sabotage the installations, or even delay them—that wasn't his job. All he did was pass the news on.

Yes, by doing that he'd saved the world. But Sheklov thought of an alien ship sparkling near Pluto, and wondered with a shiver: *For how long?*

An outburst of clapping, and there he was, clasping his hands above his head like a boxer. A photographer accompanying him snapped a shot for tomorrow's papers. He was a large man, broad-faced, broad-shouldered, broad-grinning. As Turpin approached, beaming, he dropped his hands and changed his grin for his look of sincere

pleasure, and the photographer snapped again.

Sheklov hung back, watching intently. A dozen people had actually entered the hall, but all bar Prexy had expertly effaced themselves. That wasn't hard; guests were pressing forward, determined to shake the famous hand or at least to be told hello. Sheklov had heard about this phenomenon, but until now had barely believed it. Yes, they did worship this figurehead, this waxwork, this mindless creation of a skilled team of Navy publicists!

Don't they know what's been done to them? Or is it that they don't care?

Now Turpin was signalling him, and he had to move forward, other guests reluctantly permitting him passage.

"Prexy! I'd like you to meet a friend of mine from Canada, Don Holtzer here!"

Prexy was instantly Prexy-to-the-nth. "Dick, any friend of yours is a friend of mine, and any friend of mine is a friend of the USA. Mr. Holtzer! Or rather: Don!"

He offered his hand, beaming. Sheklov took it. The photographer snapped, snapped again, and glanced up. "Say, Mr Turpin! That young lady's your daughter? Like to have her in a shot or two as well, a spot of glam!"

The scene seemed to freeze. At length Turpin said, "Lora?"

She came forward unwillingly, holding her boy-friend tight by the hand. "Only if he's in the shot too," she said.

"And why not?" A boom from Prexy. "Here, young lady! A kind of parable for us all, isn't it? I've never been able to hold against them the resentment some of our darker fellow-citizens

feel—justifiably, if you look at the historical record. I hope and pray for the day when we shall resolve our disagreements peacefully. And for you and your compatriots, Don, the same thing holds. One's aware there have been differences, one's aware that relations between our countries are not as happy as they have been right now, but bonds of honest trade still forge links between our lands, and where business binds friendship follows, sooner or later—"

Meantime he was putting his arm around Lora and hopefully trying to insert his fingers through the slots of her dress, but she obviously was not one of the many who felt it a privilege to be touched by Prexy. The fact that she wriggled away, however, did not disconcert him in the slightest. Snap. He altered his pose with practised skill. Snap again. Sheklov stood numb, wearing a feeble grin. He was terribly aware of the eyes of Crashaw and Levitt fixed on him, saying without words: "We'll know you next time we see you."

Snap once more, and finished. As though a spell had been lifted, people started moving about and talking as loudly as before, while Turpin found Prexy a drink and ushered him towards the densest part of the crowd, his favourite spot. Watching him go, Sheklov heard again that slick alliterative catch-phrase—"where business binds friendship follows"—and felt briefly haunted by the ghosts of a million Asian peasants.

He realised abruptly that he was being stared at. By the young man Lora had insisted on pulling into the photograph with her, the lean black, the

only black here. Blacks didn't make it to Lakonia, he'd been told.

The instant he met that dark gaze, it flicked away. But it left a dismaying deep dent, for no apparent reason, in his hitherto impermeable composure.

IX

AFTER THAT MUSIC BEGAN, and Sheklov had to circulate. Almost at once he had an alarming encounter with a TV producer named Ambow, who was eager for praise of some historical-drama series he had made. Sheklov, not having seen the show, had no opinion at first, but by the time Ambow found a more promising victim he had a very firm opinion indeed. The series was decadent bourgeois non-representational escapism of the worst conceivable kind. A man like Ambow couldn't possibly create anything better.

Indeed, this whole function had a curious quasi-historical air. The tunes being played, for example, dated back fifteen, and even twenty-five years, and in the identical style of their originals. The clothes, too, struck him as subtly behind the times—what you might have seen at a Kremlin reception a decade ago. Growing more and more depressed, he drifted from one group to another, and heard lectures on the Spics ("A billion bucks we spent on aid, and the Cubans put 'em in their pocket!"), on the Gooks ("All those American boys who died trying to save them from the Reds!"), and the Black Africans ("Can't trust anyone over there except the Boers, and I don't think we do enough for them!") . . .

I didn't believe it, he thought. But it's true!

He wondered whether someone like Ambow, working with material from the past, recognised the analogies you could draw, one-for-one, with other places and other times. And concluded that if anyone did, he must prefer to ignore them. It made him desperately sad.

Eventually, passing the half-open door which led into the living-room of the Turpins' apartment, he heard a familiar sound.

"Well, well!" he murmured under his breath. "Prokofiev!"

He debated for a moment whether it was in character for Holtzer to like "The Love of Three Oranges," and decided that that was irrelevant. Shrugging, he pushed open the door. Beyond, the lights were down to a dim glow, but he had been in here earlier today and thought he knew the layout well enough not to turn them up. He headed for a chair facing the player. It was not until he almost fell over an outstretched leg that he realised the room's long lounge, end-on to the door, was occupied by Lora and her dark-skinned friend. She was crawling all over him, but although his hands were inside her dress, fondling her back, he didn't seem to be acting very passionately.

"Sorry!" he murmured, and made to withdraw.

And backed straight into a tall, good-looking man with a shock of sleek grey hair, who in the same moment snapped the lights to full.

"Oh, Lora!" he exclaimed. "Do you know what's become of your brother?"

"Shit, piss and damnation," Lora said in a weary tone, and rolled off Danty, flinging her legs angrily to the floor.

"No, I don't! I'm not my brother's keeper, thank God!"

The handsome man reddened, and Sheklov placed him; he'd been pointed out as a minister of religion. Powers? No, Powell, that was it: Maurice Powell.

"Hey, Don!" Lora added, seeing that Sheklov was on the point of leaving the room. "Don't run off!"

Sheklov halted on the threshold. There was a pause. Eventually Powell gave an insincere grin and went out.

"Oh, that *slug*!" Lora said, falling back on the couch. Danty had twisted around into a sitting position and reached for a glass on a nearby table. "Put the lights down again, Don, and have a chair."

"I don't want to interrupt—" Sheklov began.

"Zip it!" she interrupted with a harsh laugh. "That's one of *his* lines! Know what he did to me, last party he came to here? Walked right into my bedroom where I was making out with somebody, sat down and started playing with himself while he watched! Christ, he makes my skin crawl!"

She seized and lit a cigarette from the table.

"Still, as long as he knows you're in here, he won't come back. Or with luck he'll find Peter. Made for each other, those two . . . Shit I forgot. Danty, this is Don Holtzer."

"We almost met," Danty said with a crooked grin. "In the pic with Prexy."

"Yes, of course," Lora muttered, "Jesus, Danty, how does that hit you?"

"Like dry ice." Danty set his glass aside again. "You're from Canada, aren't you, Don?"

On edge for some indefinable reason—maybe because of the searching

quality of the stare Danty had given him before—Sheklov nodded. "Yes, I'm in timber up there. Manitoba."

That much was absolutely safe to say. There were scores of Canadian firms ready to give Russian agents cover, and he had a genuine deal to conclude.

"I'd like to go north some time," Lora said. She realised that her left nipple was showing through one of the gaps in her dress, and tugged a lozenge of cloth back into place. "There's something rather cultural about Canada, I think."

Sheklov blinked, experiencing the sensation of being displaced backward in time more acutely than ever. How long since *kulturny* ceased to be a fad-word Back There? Ten years? Twenty?

"What makes you say that?" he inquired, honestly curious.

"Well—un—its links with European tradition. Speaking French there, for one thing." Lora's answer had a seizing-at-straws sound. "Mother's maid Estelle is from Montreal, and she speaks French. I think it's a romantic language."

Obviously, having recovered from her annoyance at failing to get all the way with Danty, she was sliding into a regular rôle. Now she added in a wistful tone, "I've often dreamed of standing on the Champs Elysées and watching the sun go down behind the Arc de Triomphe!"

"You'd have a long wait," Danty said.

She glared at him. "Shit, you know what I mean!"

But Sheklov's nape had suddenly begun to prickle. Danty had uttered that statement with authority. And it

was quite correct; if you were standing in the Champs Elysées, the sun couldn't set behind the Arc de Triomphe. He said, before Lora could go on, "You've been there, have you?"

"How would I get a passport?" Danty grunted, and turned to his drink again.

Yet there had been assurance in his tone . . .

Still, Lora was talking again. "Have you travelled much, Don? It's easier for Canadians, isn't it?"

"Well, I guess so," Sheklov said, mentally reviewing Holtzer's life-story. "But me, I haven't been around too much. We're one of the few countries left with a frontier, you know. Pushing north instead of west. That gives us a lot of elbow-room. So we—"

The door, which Powell had closed on leaving, slammed wide, and there in the opening was Peter. Obviously he had been drinking heavily; he was flushed and unsteady on his feet.

"Well, well!" he exclaimed. "That's so sweet! My sister and her johnnyreb snuggled up!"

"Zip your mouth, you reeky turd," Lora said, and twisted on the couch so her back was towards her brother.

"Hey!" Sheklov exclaimed, half-rising. A look of instant fury had appeared on Peter's face, and he seemed about to launch himself bodily at Lora.

"Oh, fade away!" she told him over her shoulder.

"Peter?" a richly resonant voice said from outside. Yes, it was Powell back again. "Ah, there you are!" He touched the boy companionably on the arm, and left his hand there as Peter stepped back against him.

"I'm going to make you pay for that!" he snarled at Lora.

"Peter!" Powell reproved. "That's no way to talk to—"

"So how would you like to be called a reeky turd?"

"Oh, sticks and stones, you know, sticks and stones!" Having located Peter again, Powell seemed to have had his good humour restored too. He eased the boy into a chair and sat on its arm, his hand still where he had first put it. "I must say the party's going splendidly, isn't it? Are you enjoying yourself, Lora?"

"In the compny of my johnnyreb, yes, thank you!"

"My dear girl!" Powell said, shocked. "That's not a term to bandy around lightly, you know. To call someone a reb is to accuse him of being a wastrel, whose actions strike at the very foundations of our cherished heritage!"

And Danty glanced up and nodded: *mm-hm!*

That threw Powell completely. He almost gaped for a moment, and then added, making a fast comeback, "Though we must not condemn too harshly. It's not for us to sit in judgement, after all."

"Except on ourselves," Danty murmured, and packed a dozen personal implications into the comment. Powell got them all. He tugged at his clerical collar as though it were suddenly too tight.

"Very true. I must remember that phrase. 'Sermons in stones . . .' And we're told that stony ground will be the lot of some of our seed. Tell me, young man, are you lapsed from the brotherhood of your church?"

"I guess so," Danty said indifferently.

"Shame! But we mustn't lose hope

for you, must we? 'There is more joy in heaven—' And so on."

Maliciously Danty said, "And so on—what?"

"Over one sinner that repenteth," Powell answered automatically. Then he realised he was being needled. He rose.

"Pardon me," he said with a half-bow. "I'm a long-suffering man, but I can't endure mockery of my Cloth. Come, Peter. I think I begin to understand your antipathy to your sister."

The instant the door closed, Lora threw herself at Danty. "Oh, you're wonderful!" she cried, and thrust her tongue into his ear. "I'll go find some more drinks—I want to wash away the taste of that slug! Won't be long!"

And, rising, she added to Sheklov, "What's yours, Don? Whiskey? Right!"

Left alone with Danty, Sheklov thought himself by main force back into the conservatively disapproving rôle which fitted his pose as a successful Canadian salesman, and said, "You told the minister you're a reb. I hope you were only—uh—needling him?"

Danty gave a shrug. "Well, I didn't invent the term, but I find it easy to put on."

Sheklov's mind raced. How to strike a balance between ostensible conformity and real interest? Once again he recalled Bratcheslavsky, squatting on the floor in distant Alma-Ata; the old man had said, "Reb! That's a word to bear in mind. There's something going on. From here one can't find out exactly what. Official smog surrounds the reality. Maybe it's just another term for what we used to call *stilyagi*, or jet-set. On the other hand, maybe not."

He felt suddenly dizzy. Those dark eyes were boring into his again. Could the liquor—? No, of course not. It was far weaker than the 140-proof Polish vodka he . . .

From a very great distance a voice that was recognizably Danty's reached him. It was saying, "You want I should join the church Powell runs? Twenty million people watch his sermons every Sunday. That makes *him* a holy man?"

And then the appalling, incredible thing happened. He continued, "Those who are full of desires for self-gratification, regarding paradise as their highest goal, and are engaged in many intricate scriptural rites just to secure pleasure and power as the result of their deeds for their future incarnations—"

And Sheklov went on with it. He couldn't help it. *He couldn't help it.* Cold terror raged through him at every funeral-bell syllable that he uttered, but he heard his own voice, out of control, inexorably finishing the quotation.

"Whose discrimination is stolen away by the love of power and pleasure and who are thus deeply attached therein, for such people it is impossible to obtain either firm conviction or God-consciousness."

Sweat crawled on his palms. The last time he had heard that truth, it had been in another language, in Banaras, and Donald Holtzer had never been to India.

That was his cover blown to bits.

X

LATER, HE GOT EXTREMELY DRUNK. His cover as Holtzer was proof against

that—it had been tried to the limit during training sessions—and anyway the same thing was happening to a lot of other people, starting with Prexy, who fell down at about eleven-thirty and had to be discreetly removed. Then there was a curious blurred interlude involving two women who claimed the right to go to bed with Turpin because their husbands were necking with each other. He didn't follow the logic of that, but it came to blows, and one of them departed with a swollen eye which would call for her best cosmetic skills tomorrow.

Yet everyone was shaking Turpin's hand, or kissing his wife, or both, with enormous warmth, and saying, "Marvellous party, Dick! You must come to our place very soon!"

What's the standard of a "good party"? The fact that no one was taken to the hospital?

Danty and Lora had disappeared early. Something about a night-ride? He wasn't sure, but he hoped—

Do I? He struggled to think through the alcoholic haze, and concluded that he hoped yes. If they were drunk enough to crash into a bridge on the superway, that would rescue him from his terror. In this country for a matter of hours, and already betrayed by his own stupidity! He felt as though he had exposed himself on the street, knowing there was a policeman within shouting distance.

Ultimately, a little before the last guests left at one o'clock, he found his way to the room he'd been allotted—normally Peter's—and screamed at a group of three men and two women using the bed. They went away, spitting at him, and he collapsed.

And then he had to fight his hangover.

The maid Estelle came silently to him at nine with a remedy of some sort, a pill fizzing in a glass of water. Apparently it was the routine after-party treatment in the Turpin household. Five minutes later he felt a little better.

He sat up in bed, sipping the coffee which she had also brought, and used the remote-control to turn down the TV. She had switched it on, without asking him, as she went out. He'd already noticed that these extraordinary people didn't seem to feel that a room was habitable unless either bland music or a TV image were included in the décor.

He postponed consideration of his self-revelation to Danty, because on the one hand the subject was too complex to analyse while he was hung over, and on the other although he felt the sky had fallen on him he had not yet been hauled away to a cell.

Of course, by his standards this room could have done duty for one, it was larger by a bare metre in each direction than the bed... though there were closets built into the wall.

He shook his head incredulously. Two hundred thousand dollars! That was what his briefing said Turpin had had to pay for this—this rabbit-hutch! And his was only in the medium range. The most expensive apartments here had two extra rooms and a party-hall that didn't have to be shared, and set the buyer back twice as much. But you didn't aspire to that unless you were on the Energetics General Board or of staff rank in the armed forces. In this particular tower, Sheklov knew, the

penthouse belonged to a four-star Air Force general.

How did a nation get into a mess like this?

So far he hadn't managed to explore this one city, let alone the surrounding country, but he had been thoroughly stuffed with data, and against the throbbing of his head he fought to organise what he recalled into some sort of relevance to his situation. Lots of glib catch-phrases came to mind: for example, "Human beings are subject to forces so ingrained in their thinking as to render them incapable of detached evaluation of their own behaviour."

Very helpful. In other words: "All we learn from history"—or psychology, or anthropology, or ethnology—"is that we learn nothing from history"—or psychology, or...

Yes.

Still, these people had learned how to make a first-rate anti-hangover pill. He was already able to look directly at the brightly sunlit window of the room without narrowing his eyes. No doubt of it, Lakonia offered some lovely views—those towers like a solemn crazy forest, the sparkling lake, the redwoods in the distance which, force-grown or not, were splendid trees, rivalling anything he had seen in Siberia.

And their Chief Executive (nominal ruler) had been carried out, dead drunk, from the room adjacent...

Bewildered, he shook his head. It had to be an illusion! You couldn't possibly run a country this way!

Liar, his conscience said. It's being done. So you can.

At which point his more orthodox

attitudes overcame him: *Yes, but look at the trouble it causes everyone else!*

He heaved an enormous sigh, told himself the hangover pill was perfect, superb, terrific, and finally managed to whip the crazy ringing nonsense inside his skull into some sort of pattern. It was a disarmingly random pattern—a mental counterpart of decadent non-representational art—but it had some expressionist overtones he found comforting because they indicated that he was at last beginning to feel, instead of just perceiving, the functionality of the extraordinary society he was visiting.

To begin with, this is NOT the Eastern Roman Empire. The hell with how many parallels you can draw! (Who am I? Oh, that's not hard to define. I'm the discontented mercenary within the gates, who has taken sufficient pay in coin stamped with the Emperor's head—or rather, with the heads of Emperors, because they change their rulers like the weather!—to lie indolent on the triclinium and open his mouth to the food offered by a domestic whore. Male or female.) POW!

A stab of pain lanced his forehead over his left eye; the hangover pill wasn't, obviously, a hundred per cent efficient. He gulped more coffee and wondered wistfully what would have become of America if it had socialised cannabis instead of alcohol.

Resuming: *In that case, the hungry Huns at the gates of the Empire are—*

"Oh, stop it!" he said aloud, and slapped his bare thigh. One didn't wear pyjamas or nightshorts here; according to his briefing, the mere possession of such garments was taken as proof of lack of confidence in one's ability to

secure a partner for the night... of one sort or another. (He still didn't entirely believe the cover which. Turpin had assured him, excused his overnight absence from home in order to collect a spy from the sea. The story was that Turpin now and then liked to sleep with a man, and because of his professional standing preferred to travel a long way from Lakonia to look for one. And never talked about where he had spent the night, and never asked what his wife had done while he was away.)

Did that brown-skinned "reb" Dandy slip me a psychedelic drug last night? I feel as though...

But a glance at his watch, not removed because he'd been briefed concerning Americans' attitudes to time and knew he would be suspect if he was caught without a watch even while making love, confirmed that since he swallowed the first mouthful of his coffee only two minutes had gone by. The illusion that he had spent ages musing like this stemmed simply from the impression that he had been shouted at, non-stop, since he came ashore. He had met more people last night, for instance, in a shorter space of time, than ever before in his life, and digesting such a storm of information was like eating a nine-course banquet directly after fasting for a week. Mental eructations interrupted every argument he tried to think through to a conclusion.

One more try!

His coffee-cup was empty. He thought about pressing the buzzer by his bed, which would bring back Estelle to see what he wanted. That was among the reasons why an apartment in the Lakonia towers was so expensive; no other dwellings had been erected in the

United States for over twenty years which incorporated a room for a servant and facilities for summoning her. Besides, there was almost literally nowhere else where anyone willing to be a servant would voluntarily seek employment. No native American would do so; Canadians were scarce; Mexicans were allowed in only on sufferance, by way of consolation for having their country policed by US soldiers, and so many Cuban saboteurs had sneaked in by posing as Puerto Rican valets and chambermaids that a total ban had been imposed.

(It was like being the focal point of a beam of light split up between the facets of a jewel, then reflected back towards a centre by a ring of distorting mirrors. He was aware, simultaneously, of the things he had been told in his briefings Back There, and of the things he had seen which matched his briefings, and also of the things which didn't—and these last were terrifying.)

Get your head straight! (And, superimposed, awareness of the fact that the phrase was older than he was.) Take it from the top!

So where is the top? Government level? Good enough. Here I am: the cherry on the sundae of the Frozen War.

Was anyone still trying to break that twenty-year-old international log-jam? Since they recalled and jailed the American negotiators in Canberra, for collaborating with the enemy, surely someone must have had another go? Tonga? Was that where the conference last?

Oh, never mind. For all practical purposes, you had to compute with the status-quo. In other words, these people knew that their country had been the first to put men on the moon, and

capped that achievement by doing it a second time, and then discovered that there were two million other people who didn't give a damn about the moon. Too late. Just in time to pull the troops back and assign them to the streets of American cities. If they'd waited a year longer, there wouldn't have been troops to pull back. Whole army corps had been decimated by drugs and desertion, exactly as happened to the Tsarist armies in 1917.

Then there was a slump, which rendered American corporations unable to meet overseas commitments. Then, because of the slump, there was a witch-hunt, and the possession of an American passport became the (high-priced) excuse to apply for political asylum elsewhere. The end result was, simply, that no one wanted to know the Americans any more, and the Americans stuck their noses in the air and said, "Stuff you, Jack, we're self-sufficient."

Like the Byzantine Empire after the loss of the rich western provinces to the barbarians.

But only *like* that. Not the *same*! True, they talked in similar terms, forever complaining about the foreigners who bit the hand which fed them, and they treated their fellow-creatures as objects—thus to lie with a woman was a mere discharge of tension, not the gauge of a genuine liking. But there hadn't been an empire. The tentacles of what might have become one had been chopped off just in time—by the Vietnamese, the Cambodians, the Burmese, the Filipinos, all of them with help from Peking.

Nonetheless the *kalpa* was cycling. He could feel it. He had studied Marx; he had studied Toynbee and Sorokin;

he had studied the *Rig-Veda*. It was his firm conviction that the resources of human beings were limited, and that implied that—even if there were no precise repetition—a man now, in a predicament analogous to that of a man ten thousand years ago, would react in an analogous manner. The Hindu notion that the universe repeated itself was a poetic truth, like the Toynbeeean parable of the progress of civilisation. He, like everyone else, was carried on a wave in the middle of an ocean too vast to discern the shores of, and...

And it was making him sea-sick. He got off the bed with a grunt of anger and went to see whether a cold shower would "straighten his head."

XI

WHERE...? *Oh. Oh, yes. I think I remember. Or do I?*

And, the moment after recollecting why she was in this strange shabby room that shook and trembled, Lora wished she hadn't woken up enough to do so. Her mouth tasted filthy, her stomach was sour, and there was a dull gnawing pain between her eyes.

She was stretched out naked on a hard couch covered with a sheet: old, but intact and fairly clean. It had been far too hot last night to bear any covering. It had also been too hot to go on lying next to Danty after they finished screwing. A mere touch made sweat erupt from the skin like a strike of water in a desert. So he was on the other couch, at right angles to hers.

So I finally had a black. Funny. It didn't feel any different. It was dark, of course...

She reached out and brushed Danty's toes with her own. His response was to bury his face deeper in his pillow.

We meant to go night-riding, didn't we? And then... Did he talk me out of it? I guess so, because we came here.

Not important. Not as important as the fact that her bladder was bursting. She sat up, and nearly cracked her head on a wall-hung bookcase. There were a lot of books here, she realised. On the floor, too. When she swung her legs off the couch, she trod on one and picked it up and read the title. It said: *The Calculus of Mysticism*.

Not only the books were peculiar. She saw a curious trefoil-shaped piece of plastic with furniture castors underneath, hung on string from a nail, and a plastic battery-driven orrery, one of the big ones that cost a thousand bucks, and a Benham's top, and a tape-recorder with a Buddha on the lid. The Buddha looked as though it might be Japanese.

Hmm! So this was Danty's home! Last night she hadn't really noticed; her attention had been elsewhere. Half eager to relieve herself, half anxious to find out more about him while he was asleep, she wandered the long way around the room towards the curtain at the end which, because it was next to an obvious shower-cabinet, she assumed to conceal the toilet. The only other door, apart from the entrance, was ajar and revealed a tiny kitchen.

A violin, for goodness' sake! Or is it a viola? I wonder if he plays it—reaching to twang one string of it faintly—or if it's simply decoration.

Curtain. She pulled it back. And discovered that it did not give on to a toilet, but an alcove just wide enough

for a single bed, on which a dark-haired woman was asleep.

She stared for a long frozen moment. Then she let the curtain fall and spun on her heel. Spotting her dress tossed over a chair, she ducked into it—a slow job, because her arms kept coming out through the wrong openings. But she managed it in the end.

Shoes? Oh, yes: left them in the car. But where the hell had she left the car with them in?

She rushed to the window: grimy, reinforced with wire, veiled with cheap semi-translucent curtains. Below, on the opposite side of the street, a car that looked like hers—the right make and model, anyway. Thank goodness.

Toilet?

The reeky turd! I'll use his shower!

She turned it on, reluctantly, when she'd finished, and got splashed. The noise of running water aroused Danty, and he gave her a sleepy grin and said, "Hello, Lora!"

"Goodbye!" she snapped, and stormed out. The exit door gave a satisfactory slam.

That was what woke Magda. When she pushed aside the curtain, she found Danty at the window, watching Lora on the way to her car. She said, "Hi, Danty. Was it the Turpinette?"

"Hi, Magda." He didn't look around. "Yes."

"Slumming, hm?" She approached and gave him a peck on a cheek stubbly with new beard.

"Yes, I guess so. And apparently regretting it this morning. But last night she had a terrific time." He uttered a sad chuckle. "You'll never believe this, but it's gospel. She managed to have me photographed with Prexy!"

Magda drew back half a step, staring. Abruptly she burst into helpless laughter.

"Danty! Oh, *baby!* That's the end, the ultimate end!"

"Shit, you'll be a White House consultant yet, honey," Danty said. The car below moved off, and he turned back from the window. "Fix some coffee, hm? I'll go take a shower. I need one. That kid has—uh—variegated tastes in BCT."

"She doesn't call it that, does she?" Magda demanded in disbelief.

"No, she doesn't. But she confided that her mother does—or did, at least, to explain her lovers to her kids when they were young. 'Body contact therapy,' straight up." He yawned and stretched. "Tell you about it in a moment."

By the time he was through showering and shaving, there was coffee in big mugs and Magda had put on a robe. She said as Danty sat down, "Tell me, did it work out?"

"Yes." Sipping his coffee, he suddenly unfocused his eyes in the disconcerting fashion he had, which made him seem to be peering into another world.

"You don't sound very happy about it."

"Hell, no! It gets bigger and more terrifying. It's like being in a car with the governor shorted out, and some crazy fool at the wheel who wants to prove he's as good as a machine at a hundred-fifty. I mean—hell! I *knew* I had to be at the scrapyard, but I didn't know why until I saw Josh and Shark and Potatohead getting ready to strip and kill her. So I fish her out of trouble with this busted rifle, so she invites me

to this party, so I meet this Canuck who's a house-guest of her father's. Says he's in timber up in Manitoba. Piss on that. He can quote the *Gita*. I heard him. Hell, I made him! And I looked around the garage while Lora was getting out her car, and right next to it was her father's and I saw it before. It was the car waiting to pick up the man from the sea."

"You think it's Holtzer."

"It's Holtzer, no shit." Danty drew a deep breath; when he let it out again she heard his teeth rattle. "Magda, I *am* goddamned scared now! I do weirder and weirder things for subtler and subtler reasons, and I daren't not do them, and what frightens me worst—"

He broke off. Magda reached across the table and clasped his hand.

"Well, this," he said after a pause. "What do I do when I reach the point where I feel what I must do, and I can't do it, because I'm like sick, or weak, or tired out? Won't I know I'm—well—trapped?"

"You ever felt that's come close to happening?" Magda asked in a commonsensical tone. Danty pondered for a moment.

"I guess not," he said eventually. "I guess with luck it may not. If I go on getting better at using the talent, I may be able to take precautions. I could avoid exhaustion, for instance. Illness, though . . . I don't know."

"The way I see it," Magda said firmly, "is that anything which made you sick and weak would probably screw up the talent anyway. It uses up a hell of a lot of your energy, that's for sure. I mean, look at you! You're not just lean, you're scrawny! I can count your ribs."

Danty gave his body a self-conscious glance.

"I'll fix you a good big breakfast," Magda said, rising. "After that I'll have to stash you behind the curtain. I have a customer due at noon."

"No need for that," Danty said. "I guess I can relax a bit today. I don't feel there's anything I have to do at once."

He added, stretching, "Christ! Does that make a change!"

Sunday was spreading slowly across the nation. The superways, of course, were packed to capacity—literally millions of people knew no more enjoyable way to spend their free time than hurtling from place to place at high speed. Many people routinely did a thousand miles every weekend, and a few notched up double that.

Buzzing low over one stretch of superway close to the Atlantic coast there came a flight of plain gray helicopters, their only distinguishing mark a big white number: 33. Recognising them, people in cars below began to wind down windows and wave, and probably also shout, only the traffic-noise drowned out their cries.

Everyone was always delighted when they spotted one of the Energetics General service teams. More than the Army (because the Army was often called on for domestic duties and hence was little liked by those who had personal experience of martial law), and far more than the Navy (because the Navy had gone into politics full-time—the current Prexy was a Navy nominee, though likely to be the last for some time because everyone knew that Army was winding up for the next election and had something extraor-

dinary up its collective sleeve—and most Americans still vaguely distrusted professional politicians), the engineers of EG were the people who had armed and armoured the United States against the malevolence of a hostile world.

In the lead helicopter of the flight, Gunnar Sandstrom waved back, because he knew his crew expected it of him, but he was glad when the superway was out of sight. He was becoming more and more concerned about his name. He was wondering how to change it to something—well, something *plainer*. It had been an okay thing for the past couple of decades to bear a Scandinavian patronymic, but the climate was getting tougher all the time, and you could hardly find any Polish, Italian or German names now.

On the other hand, if he did decide to indent for a fresh name, it would mean months of grilling by security, probably temporary suspension from his job, endless re-evaluation of his record, and he might all too easily be graded down to so low a clearance that EG couldn't keep him on . . .

He was still debating with himself when they came to the reserved area which was their day's destination. But he hadn't reached a decision. And he knew he would go on pondering tomorrow, the day after, the day after . . . He had been divorced once because his wife, in the long run, didn't like the name which had originally struck her as romantic. And at thirty-five it was getting harder and harder to find girls who were still inclined to regard a touch of "foreignness" as interesting.

In accordance with normal routine, the 'copters made a pass beyond the reserved area to check the seaward side. A mile to the north there was a

beach which wasn't too badly fouled with oil, sewage and garbage to be used, and now and then they found a small sailboat blown off course around here, or a swimmer-wearing rubber and a mask, naturally. Today, however, there was no one, so they circled and set down.

"Josh!" Potatohead said, and pointed at a display of papers outside the little store they were passing on the way to a hoverhalt. "Saw'n *Cronkle*?"

"Ahsh'd lookun-at asswiper?" Josh grunted. He meant it. The *Chronicle* was a Navy paper, always carried dozens of pictures of Prexy, and admirals, and turds like that. But fat on Sundays, lasted a whole week in a toilet.

"Na front! Seeth'addle cock 'narleq'in?"

Josh started, and bent to look at the caption. "Shite," he said, having painfully puzzled out the words. "Say, she dottuv Turpin, VG! Pissun *shit*!"

Shark Bance craned over his shoulder. He read nearly as well as Josh and never missed a chance to prove it. After a moment he said, "Hey! Week'dad ransom fo' *her*-lahk millun bucks!"

Josh gave him a wordless snarl. "Yea! An' lookun nexter inna pic. Pegdun? Hm?"

"Sho!" Potatohead said. "Howsee call?"

"Dan," Josh worked out. "Tee. Wah-nah, shit. Ward." He straightened, and put on an evil grin. "So, hey! Tha' blabbo dundus hurt, nah? Nextahm seeyum, weena hurtum histun!"

THE *Chronicle*, THE NAVY PAPER; the *Bulletin*, the Army paper; the TV tuned to WSA; hangover cure, juice, coffee . . . Comforting, familiar, the landmarks which located Lewis Raymond Turpin at Sunday morning. Naturally, he had learned far more last night than he could expect to from the day's formal news. About a thousand people decided what the modern American public ought to think, and over fifty of them had been at his party. Prexy not being one, of course.

Only the second year of his term, and already the faceless mass was beginning to hear bad rumours! How much longer would Army let things ride? Would there be a coup and an impeachment, or just a diplomatic illness and voluntary relinquishment of office? (Add quotes around that word "voluntary.")

It would be good for Energetics General whichever way. Navy detested EG; so many of its top brass recalled the proud days of Polaris submarines. Then EG had introduced the Nightsticks, and . . .

The process had already been under way when he arrived a quarter-century ago. By then, the ten biggest corporations in the country were being sustained on taxpayers' money—aircraft, chemicals, computers, transportation services, virtually all the key industries were being regularly transfused with government funds. Naturally, because any other form of federal investment was castigated as "creeping socialism," it had to be via the Defence Department that the money passed. A gener-

ation of ingenious public-relations work had convinced the public that this aspect of government activity was sacrosanct, never to be questioned by a loyal citizen.

The percentages crept up. Energetics General, back in those far-off days, had drawn only some eighteen per cent of its budget from the DoD. Currently the figure was closer to ninety, and since Turpin was a senior vice-president now—a mere eleven steps below the pinnacle of the EG hierarchy—the President came to his parties. So did the Chairman of the Joint Chiefs, even though he was an admiral. So did everybody who really counted.

Now suppose, just suppose, there was going to be a coup against Prexy—what they called in the history texts a “palace revolution,” because of course the faceless mass would never be allowed to learn the details. Would that bring about the long-desired collapse of this over-blown, top-heavy, outright dangerous economic cancer?

He feared not. Perhaps in another decade. Right now, there were still too many clever, dedicated, and *insulted* men in positions of influence, who remembered how they had been shot at in Viet-Nam, bombed in the Philippines, and ultimately spat upon in Panama. It wasn’t their fault, they maintained, that they’d been dragged home under orders to quell insurrection, and that the other side had been waiting to pounce, so that when their house was set in order they had nothing else to do but squabble for power.

There had been a great weariness, a vast sense of futility. Everything they had undertaken with the best intentions had turned sour. Like an injured por-

cupine, exposing its spiny back to the attacker and pressing its soft belly to the ground, the nation had abandoned its outside commitments one by one and planted automatic missile sites along its coasts. The grandiose space-program decayed, and for fifteen years or more no American had been launched into space except to service the orbiting missile-detectors—of which there were thousands. Meantime, not from courtesy but a sense of self-preservation, the space-going powers duly notified every launching—for fear it might be mistaken for an attack—to the DoD.

Not to the White House. What would be the point? Effective government in America was the DoD.

During the four years of training which had preceded his injection into the States as a man who had not previously existed, yet who sprang convincingly full-grown into a flawless background, he had been told, over and over, the orthodox analogies. Look at what happened to the Romans, they said, when internal discord prevented them from deploying their own forces to guard their frontiers. They hired barbarian mercenaries, and within a century or two those same mercenaries took over. For “barbarian mercenaries” read “corporations under contract to the Department of Defence,” and you have it right there.

Or else: look what happened to Spain and Portugal, when they lost their empires in the New World. From world-power status both countries declined into poverty, intellectual underdevelopment, and dictatorship. Or, most graphically of all, consider the British: tricked into electing a right-wing government that forcibly de-

(Continued on page 105)

When we published Gordon Eklund's first story, "Dear Aunt Annie," in FANTASTIC last year, we predicted big things for this writer. Since then, that story has been a Nebula Awards nominee (a finalist), and Eklund has gone on to appear in most of the better magazines and new-story collections, publishing his first novel this year, The Eclipse of Dawn, as an Ace Special. His most recent story in these pages was "Gemini Cavendish" (March, 1971), about which we could say only that it followed the "pattern" of his previous stories by in no way resembling them. The same is true of the story which follows...

TO END ALL WARS

GORDON EKLUND

Illustrated by STEVE HARPER

"I HAVE TO GO," Hallmark said. "If I'm not back in time, the ship will leave without me."

"Finish your drink," the girl said. "You can't go yet." She was a redhead with light pale skin and sharp red freckles. Hallmark couldn't remember her name.

"I told you when I met you—I just wanted to talk. You're a nice girl and I like you. But I can't stay. If I don't make that ship, I'll be a deserter."

"Aren't you one now?"

He smiled and shook his head. "I jumped ship. The crew was restricted and I left. I heard there were Terrans in the city and I found you. It's not the first time I've done it. They'll dock my pay and slap my fingers. That's all. But if I don't make it back..."

"It doesn't matter," the girl said. "You can't leave. Didn't you notice that everyone left an hour ago?"

Hallmark looked around the barroom. Except for himself and the girl, it was empty. Even the bartender had disappeared.

"I noticed," he said. "But you stayed and I stayed."

"I live upstairs and never go out. Hallmark, didn't anybody tell you about the war?"

"Which war?" He laughed. "There's a dozen raging in this sector right now."

"The Kirkham War," the girl said. "The one that's raging on this planet, the one that's been raging for ten thousand years."

"Wars don't last that long. And, no, I never heard of it. They don't brief you when you're not expected to leave the ship. So there's a war going on? So what? I'm a Terran; you're a Terran. We're neutral. We're always neutral."

She shook her head sadly, red hair swishing across her forehead. "I should have warned you, Hallmark. I should

have warned you when I saw you walk through the door. But—you don't know how it is. I haven't seen a Terran in months. I can't talk to the Kirkhamites. They don't think the way we do. I can't—"

"Warn me? Warn me about what?" Hallmark was getting worried. He glanced at his watch. One hour left before departure. He couldn't miss that ship.

"The war—the curfew. Nobody's allowed outside after dark. That's why everyone went home. Why didn't you tell me you had to leave?"

"My ship leaves in an hour. I've got to go."

Finishing his drink, he stood, pulling a spacer's cap over his dark, bristly hair. His thick lips cracked into a grin and he patted the girl lightly on the shoulder.

"If I don't get back," he said, "they'll leave without me. I can't let your local troubles stop me. It's my career—my whole life."

"I understand," the girl said. "It was nice talking to you, Hallmark."

"Good-bye," he said.

"Good luck."

Hallmark went out the door. The street was silent and dark, the dull light of the distant moon providing the sole illumination. The night air was thick and hot and he sweltered inside the tight skin of his spacer's costume.

As he walked along the red-brick sidewalks, the magnetic heels of his boots clicked sharply in the stillness of the night. He stayed close to the squat, square buildings, his eyes probing the darkness, searching for signs of approaching danger.

Three blocks passed, then four. The spaceport loomed ahead, glowing ob-



trusively in the surrounding blackness. He could see the *Rambler* in its berth, dozens of tiny human figures darting around the ship, preparing it for immediate departure. Hallmark stopped and read his watch. He quickened his pace. Lift-off in twenty-three minutes.

"Halt! Halt or we'll fire!" The voice came from behind and to the left.

Hallmark halted, throwing his hands in the air. A flashlight covered him and two uniformed Kirkhamites approached, their bristly cat-whiskers wagging at him. They held primitive hand-weapons, the barrels aimed at his stomach.

"Who are you?" demanded the tallest of the pair. "What are you doing out here?"

The Kirkhamite spoke Galactic. Hallmark answered in kind: "I'm a member of that ship. The one in port. We're taking off."

"Your name?"

"Hallmark. Engineer Second Class Samuel Baines Hallmark of the *Rambler*. I'm a Terran."

"I can recognize that fact," said the Kirkhamite. "We have many of your species in our city."

The second Kirkhamite spoke softly into a small radio. It hummed at him in reply.

"Are you soldiers?" asked Hallmark.

The taller Kirkhamite acted as if he hadn't heard the question. He walked over to his companion and they conferred quietly in their native tongue. Hallmark kept his hands in the air. His elbows hurt.

The aliens finished purring at each other and turned to face Hallmark. "You are legitimate," said the taller one.

Hallmark lowered his hands tenderly. "May I go?" he asked.

"A question, please," said the Kirkhamite. "Why are you not on your spacecraft? Our leader has requested that all aliens remain outside the limits of our city."

"I had to obtain medicine," Hallmark lied. "Our captain is a very sick man."

"That is indeed a tragedy," said the Kirkhamite. "You must hurry to your craft, Engineer Hallmark. But I would recommend care on your part. Our city is at war."

"So I've heard," Hallmark said. "I will be careful and . . . thank you."

The Kirkhamites turned away and crossed the street. Sighing with relief, Hallmark hurried toward the spaceport. His watch showed a mere fifteen minutes remaining before lift-off.

He'd gone half-a-block when something hard and jagged hit him in the back of the head. He spun on his heel and glared at the night. His vision blurred and a black pool opened at his feet. He threw his arms in the air and fell into it. The black water covered him. He gasped, struggling to breathe. It was useless. He closed his eyes and dreamed of the sun . . .

The ceiling was purple and the walls were orange. Hallmark rolled off the narrow cot and fell to his knees. His head hurt and his body ached. Tiny black dots spun before his eyes.

"Hello!" he yelled. "Anybody home?"

The dots receded and the pain remained. He pushed himself to his feet and sat on the edge of the bed. He looked at the room. It was small, empty, and windowless. He scanned the walls, looking for the outline of a

door. The black dots returned and danced across his vision. He raised a hand and pushed them away. He looked at his watch. The figures blurred, then solidified. The hands weren't moving.

I'm lost, he thought. I turned my back and they stunned me. I should never have lied. They knew the medicine story was a fake.

The wall opened and a Kirkhamite walked in. The pale blue fur around his lips crinkled. Hallmark smiled back at him.

"I am Odom," said the Kirkhamite. He stood in front of Hallmark and stuck out a paw. "Would you like to exchange the traditional handshake?"

"I'd rather not," Hallmark said. "I'd like to know where I am. Has my ship left?"

"Your ship?"

"Yes, the *Rambler*. I'm a legitimate crew member. Your soldiers checked me out, then they stunned me. What's this all about?"

"You lied to our soldiers. You had no medicine. Your captain is a healthy man. It was necessary to detain you. We are at war, you know."

"Yes, I know" Hallmark said. "And I'm sick of hearing about it. All right, I admit I lied. Now can I go?"

The Kirkhamite—Odom—smiled again. "Your ship has left our world. You have no place to go."

Hallmark groaned. "I should have known. Look—I want a signed statement from you. I want it explained that I was snatched by your police. I want—"

"You are in no position to make demands. We are aware that you are an impostor."

"I am?"

"You are indeed. You are the Enemy. Normally we dispose of your kind as spies. But, fortunately, we have a use for you."

"I'm Samuel Hallmark. I'm a Terran. I'm not your enemy."

"But you are. The Enemy employs many mercenaries. You are not the first Terran we have apprehended. Your disguise was an excellent choice. However, your tale of the medicine was poorly handled—very poorly handled indeed."

"But—" Hallmark rubbed his head and wished the pain would go away. "But I am Samuel Hallmark. If I'm not, who is?" He laughed nervously.

"The real Samuel Hallmark has deserted his ship. We are searching for him now. We suspect that he has been captured by the Enemy and executed."

"You have everything neatly arranged," Hallmark said. "I want to see the Terran consul."

Odom wiggled his whiskers. "That will be impossible. We must proceed immediately with the negotiations."

Hallmark stifled an urge to scream. In a calm voice, he asked: "What are you talking about?"

"The peace negotiations, of course. Surely some reports have reached the Enemy. For the past year, we have been talking peace with three of your mercenaries. Unfortunately, two of them just died. Torgans, you know, very fragile creatures. You will have to assume their place at the table."

"I . . . This is getting ridiculous. Look—I can't negotiate peace. I am who I say I am. I know nothing of your war. I don't know who you're fighting or why. I know this war is supposed to have lasted ten thousand years. But that's all I know."

"That's all you need to know. Please—come with me. The discussions are about to commence. And, oh, I did forget to tell you. I am chief delegate for our city."

"Congratulations," Hallmark said.

"Thank you."

The wall opened and Odom passed through it. Hallmark shrugged and followed. Two uniformed guards fell into step behind him. The guards were armed with sophisticated stun-guns.

I have to go along with them, Hallmark thought as he walked rapidly down the narrow corridor. Eventually I can make contact with the Terran consul. He'll get me out of this. I'm lucky they didn't kill me. They must really believe I'm a spy.

Odom passed through a door and gestured at Hallmark to follow. The room was vast and poorly lighted, empty except for two long wooden tables which faced each other in the center of the room. Odom sat down at one of the tables, finding a chair between two native Kirkhamites. Hallmark crossed the room and sat at the other table. Seated next to him was a lanky humanoid creature with dark brown skin.

As the Kirkhamites purred excitedly at one another, Hallmark leaned over and said: "You're not Terran, are you?"

"No, I'm Gouchan." He pointed at two thick horns that protruded from his sloping forehead. "My name is Rejie."

"I'm Hallmark. Tell me—what's this thing all about?"

Rejie chuckled. "Don't try to make sense of it, Hallmark. I gave up months ago. Just lean back and enjoy things. It can be very peaceful in here."

"But, I—"

"Shh, the big man is about to speak."

Hallmark turned in his chair and faced front. Odom was standing behind the opposite table, a long blue scroll clutched in his paws.

"This is the 176th meeting of the Kirkham Peace Proceedings," Odom said, reading from the scroll. "It is now officially in session. At the previous meeting, a proposition was under consideration which would separate our delegation tables by an additional five feet. The arguments of our city in favor of this proposal had been completed and the Enemy was about to make a statement. We will commence negotiations at this point."

Laying the scroll aside, Odom sat down. He glared piercingly at Rejie and waited.

"Our statement died," Rejie said finally. "The Torgans did all our talking. I kept out of things. You know that, Odom."

"Yes, I am aware of your lack of activity. However, with the passing of your comrades, the responsibility has passed into your hands. We regret the demise of the Torgans, but it is essential that the negotiations be carried on. The satisfactory termination of our conflict is necessary for the continued existence of this planet."

"Yes, of course," Rejie said. "I quite agree but . . . what is this table thing all about?"

"Then you agree to our proposal?"

"I didn't say that." Rejie winked at Hallmark. "I'd like a few minutes in which to consult with my colleague."

"That would be allowable," Odom said. "Proceed."

"I need something to write with."

"You will find writing materials in the drawer of your table."

Rejie reached into the drawer and removed a tablet and a lead pencil. Dropping them on the table, he leaned over and whispered in Hallmark's ear: "Let's consult, colleague."

"About what?" Hallmark said, in a low voice. "What's this thing about moving the tables? I don't understand."

"Tables—chairs—pencils and papers—it doesn't mean a damned thing. I've been half-listening to these negotiations for a year. That's all they ever talk about. Hell, they spent six months arguing about the color of paper to use for the minutes. Odom and his friends wanted purple—it's their national color. The Torgans held out for green. As you can see, they eventually compromised at blue. We've been discussing tables now for three months. They've moved them around a dozen times at least."

"But aren't these talks serious? Odom talked like the future of Kirkham rested in our hands. Rejie—are you really a mercenary?"

"No more than you are, Hallmark. I fell down drunk in the street one day and woke up here the next. The Torgans came in a few days later. They fell in love with this whole set-up. Tradition, custom, courtesy—that's what their whole society is based upon. They could beat Odom at his own game. But not me. I just got bored."

"What are we going to do?"

"We're going to put our time to good use, my friend. Watch me." He ripped a sheet of paper from the tablet and drew two vertical straight lines on it. Then, raising the pencil, he crossed the vertical lines with two horizontal ones, creating a neat grid of nine squares.

In the upper right hand box, he made a cross.

"I've got the crosses," he said, "and you've got the circles."

"What do I do?"

"It's a game I picked up from another Terran. The first man to get three crosses or three circles in a straight line, any direction, wins. You've got to block your opponent while trying to win yourself."

"I think I see," Hallmark said, rubbing his chin. He picked up the pencil and made a circle in the center square.

"Aha," Rejie said. "That seals your fate." He made a cross in the lower right hand square.

A few minutes later, Rejie clapped his hands and exclaimed: "Got you! Tic-tac-toe!"

The Kirkhamites, deep in consultation, didn't hear. They were playing their own game.

The conference lasted three hours. When it was over, Hallmark was led back to his room. His dinner awaited him and he ate it with pleasure.

Tic-tac-toe, he thought. Is that how they make peace on this planet? It reminded him vaguely of a book he'd once read. In the book, there'd been a croquet game and a queen—the Queen of Hearts—and the queen had made her own rules as she went along.

But even the most nonsensical things had to make sense somehow. An answer was forming in the back of his mind. At the moment, the answer was still incomplete, but what there was of it made sense. It made frighteningly real sense.

The wall slid open and the girl walked through it, her face flushed bright red, matching the color of her hair.

"Hello, again," Hallmark said. "Are these visiting hours?"

"I don't know," she said. "I live here, too."

"Did you tell them that I was the real and original Samuel B. Hallmark? There seems to be some doubt in the matter."

"Are you the real Samuel Hallmark?"

"That's a good question."

"I told them what they wanted to know. They think I'm a spy. Get that, Hallmark. Me—a spy. I've been on this planet three years and suddenly they think I'm a spy."

The girl sat down next to Hallmark. She picked a fat radish off his plate and ate it.

"They feed you good here," she said.

"Have to keep the animals fat and happy. By the way, who is the Enemy?"

"I thought you weren't interested in our petty local disputes."

"I've been made interested. At the present time, myself and a drunken Gouchan are conducting peace negotiations for the Enemy. I'd like to know who I'm representing."

"Your guess is as good as mine." She shrugged. "They're just the Enemy."

"What are you doing here?"

"I guess you were traced to me. I'm living across the hall. They gave me permission to visit you. I join your negotiating team tomorrow." She paused momentarily and sighed. "Hallmark—does any of this make sense to you? If it does, please tell me. So many ridiculous things have happened to me in the last three years that I've gotten used to it. But I still don't like it. When I think about it, it scares me."

"Perhaps it should. Tell me—what are you doing on Kirkham? You're not an immigrant."

"No, I'm not. I came here with my husband. It was a vacation. Richard liked to visit out-of-the-way worlds, like people back on Earth who vacation in Tibet. We didn't live on Earth, so we came to Kirkham."

"Where's your husband now?" Hallmark swallowed his last bite of food and belched.

"I haven't the slightest idea. After we'd been here a week, they slapped a curfew on the city. Richard got caught outside after dark. They put him in the army and sent him to the front—or so they told me. I never heard from him again. I've stayed here since, hoping he might come back. I guess there isn't much chance of that any more."

"You say this war has lasted ten-thousand years. I saw a good chunk of the city yesterday. There's no war damage."

"It's fought out in the desert. Most of Kirkham is desert. The armies push each other back and forth, like two big rugby teams. When they clamped the curfew on the city, the Enemy was supposedly only a hundred miles away. But we pushed them back and the curfew stayed."

"Ever seen any wounded—any casualties at all?"

She shook her head. "None—but I've talked to a lot of returning soldiers. You know, trying to get word of Richard."

"Combat troops?"

"I . . . I suppose so. I don't remember. Don't all soldiers fight?"

"What do you know about the negotiations?"

"It's been in the papers for the last year. I really haven't paid very much attention. I mean, this whole war makes me sick. I know that negotiations are being conducted with Enemy mercenaries and that little or no progress is being made. There's never any progress." She laughed sharply. "I never dreamed that I'd become an Enemy mercenary."

"Neither did I. It happens to the best of us."

"How many are there? On our team?"

"Just me and the Gouchan. There used to be two Torgans but they died. The Gouchan claims that he's not a mercenary."

"We're all good guys."

"So it seems."

"Hallmark, I'm tired and I'm going to sleep. I enjoyed our talk and I can hardly wait till tomorrow. And, by the way, my name is Miriam."

"You never did tell me, did you?"

"And you never asked."

After the girl left, Hallmark lay on his cot, his hands folded behind his head. The fragment of an idea formed in his mind and slowly expanded in size and shape. As he watched, the idea became more clear, less formless. It was a good idea, Hallmark decided, the best he'd ever had. *This is the way we win the war.* And he knew that he was right.

Hallmark had been awake for an hour when the guards came to get him. He obediently followed them through the wall and down the corridor. They left him in the negotiating room. The girl—Miriam—was already in place, talking softly to Rejie. Hallmark went over and sat between them.

"Have a nice rest?" he asked Miriam.

"Wonderful—I'm ready to make

peace. Rejie was just telling me about tic-tac-toe."

"You two play a few games," Hallmark said. "I'll handle the negotiations."

"Hey," Rejie said. "I thought I was senior man."

"And I thought the whole thing bored you. I've been doing some thinking. I want to put my thoughts into practice."

Rejie shrugged. "Sure, go ahead. Miriam, you take the circles; I've got the crosses."

"No thanks, Rejie. I've got the crosses. I'm not that dumb."

"Hallmark is." Rejie grinned and rubbed his horns. "It took him five games to catch on."

Hallmark ignored the remark, focusing his attention on Odom. The tall Kirkhamite was on his feet, preparing to read from a fresh scroll.

"Is the Enemy ready?" Odom asked.

Hallmark nodded. "Ready."

Odom read: "This is the 177th meeting of the Kirkham Peace Proceedings. It is now officially in session. At the previous meeting, a proposition was under consideration which would . . ."

As the Kirkhamite droned monotonously, Hallmark watched Miriam and Rejie as they played tic-tac-toe. The girl won the first game with a line of crosses diagonally across the board from top left to bottom right.

"A victory for Terra," she said.

"Now it's my turn to win one," Hallmark said. Odom had finished speaking and returned to his chair. Hallmark stood.

"Our side—the Enemy side—would prefer to pass up the argument concerning the positioning of the tables.

Instead, we'd like to move into the very heart of the matter—the war itself. W'd like to surrender."

Rejie gasped and Miriam yelped. Odom shook his whiskers and glanced helplessly at his colleagues. The Kirkhamites fastened their eyes firmly to the floor.

"Did you say surrender?" Odom said at last.

"That's what I said."

"But—but you can't surrender."

"Why not?" Hallmark asked.

"Yeah," Rejie added. "Why can't we give up? We're sick of this damned war."

"You—you don't have the responsibility. Your leaders haven't authorized this move. Your generals will continue to fight. This whole thing is absolutely preposterous."

"The hell if it is," Hallmark said. "If we don't have the responsibility to conduct negotiations, what are we doing here? Either accept our surrender or let us go. We relinquish everything. We unconditionally surrender."

"But—but you can't."

"Are you refusing our offer of unconditional surrender? Wait till your press hears of this. I've never heard of such a thing."

"We—we don't refuse," Odom said. "We must confer."

"Go ahead and talk," Hallmark said. "Just make it fast."

Odom turned away and purred nervously at his silent comrades. Hallmark grinned at Miriam and Rejie.

"You shook hell out of them," Rejie said.

Hallmark laughed, "You mean you're not bored any more."

"I want to know what this is all about," Miriam said. "We can't really

surrender—can we?"

"I don't know," Hallmark said. "I intend to find out."

"I wish I knew what game you were playing."

"You're not the only one."

The Kirkhamites fell silent and Odom looked at Hallmark. "If we accept your so-called surrender, can you guarantee that your armies will cease fighting?"

"I can," Hallmark said.

Odom twitched. "How can you be so certain?"

"You forget—I'm an Enemy mercenary. Accept my surrender, then go to the war-zone. I bet you won't find a single man under arms."

"I . . ." Odom took a deep breath and said, "This meeting is adjourned."

"No, it isn't," Hallmark said. "We're staying until we get a definite answer. Odom, you're toying with the lives of a hundred-thousand men."

"Hallmark, shut up and go to your room. I want to talk privately with you."

"I don't see any need for that. These negotiations are supposed to be open and above-board."

"Hallmark, please."

"Oh, all right." Hallmark chuckled softly. "But anything said to me has to be said to my fellow delegates. After all, we're a team."

Odom sighed and waved a paw. "All three of you go to Hallmark's room and wait. I'll be along shortly."

Grinning, Hallmark climbed to his feet and turned away. Miriam and Rejie followed him. The wall slid open and they passed through it.

They waited in Hallmark's room. Rejie crouched on the floor and lit a cigar.

"I wish I could see the inside of your mind," he said. "You handled Odom like he was a wind-up doll."

"Maybe he is," Hallmark said.

Miriam, lost in her own thoughts, sat silently on the bed. When Odom entered the room, Hallmark tapped her gently on the shoulder.

"The moment of reckoning is here," he said.

"Sorry—I was thinking—about Richard."

"I understand."

Odom carried a chair with him; he planted it in the center of the floor. Glancing uncomfortably at Rejie and Miriam, he sat down. Then he frowned at Hallmark.

"Are you the only one who knows?" he asked.

"The girl has a vague idea."

"How did you find out?"

"It wasn't difficult. You should have stuck with Torgans. They like games. I don't."

"Do you understand our reasons?"

"I don't know what they are. I only have an idea."

"And probably a correct one. Hallmark, this world is almost entirely desert. Ninety-five per cent of the population lives in one city. Do you know why?"

"I haven't studied your history."

"Very few people have. It's a long one. We're an ancient race. Ten thousand years ago, Kirkham was a green, fertile land. Our population was a hundred thousand times what it is now. Then we had a war. The entire planet, split into two rival factions. When the war was over, only a handful of people remained alive, the few who'd managed to crawl far enough underground to escape the final decimation bombs.

When the few survivors climbed back to the surface, they were determined that such a war would never happen again."

So they invented their own war?"

"That's more or less correct. They invented their own enemy, kept him nameless, and fought an endless war with him. As our people struggled back to civilization, the fictitious nature of the war was forgotten. Only a handful of individuals were ever allowed to know the truth. The sands of ten-thousand years can cover many secrets."

"And you've been at peace ever since?"

"That's right. We have a small army in the desert which consists entirely of support personnel. Even in an actual war, eighty per cent of an army is non-combatant. I suppose there are certain holes in our scheme. But everyone accepts the war. They always have. There's no reason to disbelieve."

"And these negotiations?"

"It seemed like a good idea at the time. We used alien mercenaries because it never hurts to foment suspicion of outsiders."

Miriam, who had been listening silently, suddenly spoke: "Where is my husband?"

Odom looked at her. "Your husband?"

"Yes, he was drafted into your army. That was three years ago. What have you done with him?"

"Nothing, I hope. He should be out at the front."

"I want him back."

"I'll see what I can do."

"You'll do more than that, Odom," Hallmark said. "We have the upper

(Continued on page 130)

ROAD FACTORY

W. MACFARLANE

Illustrated by JEFF JONES

He was just a farmer, and that was what they wanted on Guelf: someone to plant seeds. But being a farmer meant a good deal more than that . . .

THE LAST THING Conway Croner expected to see after midnight on the dock of the seed and fertilizer warehouse he once owned, was a tall woman in tight gold pants and a fiery rose kneelength coat. It was a hot night after a brutally hot July day in Imperial Valley, but she looked like something out of an I. Magnin window, handsome, elegant and cool.

"I want to buy seeds," she said. Her skin color was dark cream and she wore no makeup. Her hair was close-cut, curling red mahogany. Her eyes were also red, a dark sleeping red that simulated brown. "How deep do you bury them?"

"Lady, you're out of this world," said Con Croner.

He was very tired. He had been working 16 hours a day for 10 months. He had lost his everlasting shirt in the spring tomato crop he brought along in an attempt to recoup his overwhelming losses in the winter crop. One year ago he was worth \$110,000 and tomorrow the new owner would take over the business. The last bills

were in and he had been reviewing disasters with an adding machine to learn the worst of his financial position: he was \$12,000 in debt.

"Perceptive," she said. "Are you a farmer?"

"I thought so," he said. "What happened was, I hit a 60¢ wholesale market when I was a senior in high school. Those four acres of Earlypak #7 paid my way through two years at UC Davis. I went gunnysacking during vacations and made out like a bandit." She had the quality of standing still and listening, and the sight of her was refreshing as a brand new merry-go-round.

"I read market reports like the bible and hit empty spots you wouldn't believe. I know winter tomatoes are just like Russian roulette, but the long range weather forecasts and the cockle-burr seeds and how far north the albacore got—all the indicators said a warm season. I had to front paper and run water and they got root rot and froze black anyway. San Diego had an early spring and Mexico stayed late. Does that explain it?"

"No," she said. "But I want to buy seeds and perhaps your services, if you will engage them to me."

Croner listened to the frogs croaking. A breath of hot wind rattled the bamboo in the ditch. From the Silver Horse Bar and Grille a block away, voices and laughter and music rose and fell as the door opened and shut. He looked at the bugs swarming in the light above the dock. When he looked again, the woman was still there. "Shoot, Luke," he said. "Uh—start from the beginning. Who, what where when and why, and how much."

"The City Spagassin has contracted a road on Guelf. It is a static carriion-huntsman culture and nararl was included in the standard clause. Nararl will not grow on Guelf. I was obligated to ask Responsibility to reopen the contract. Because an agricultural base is integral, this variance was granted. I left my Coordination and am here for a variety of seeds and someone to nurture them." There was a touch of mockery on her face. "Does that explain it?"

"No." Croner rubbed his eyes. "Would you like a coke?" She was puzzled. "Wine of the country," he explained and got a couple of bottles from the cooler. "How are you going to pay for the goods and services?" He ripped off the caps.

"Gold is still of value?" She held the bottle awkwardly. "My sources did not mention—" she waved at the lights, "—or that," and she nodded at the pickup driving away from the Silver Horse. She turned her head and listened. The freight to Los Angeles was rumbling over switch points. It honked at the crossing. "Railroad, yes. My information lags." She tilted the bottle



SHE LOOKED LIKE
SOMETHING OUT OF AN
I. MAGNIN WINDOW.

to her lips following his example, and looked surprised. "Time has teeth," she said, "and I am bound to no disclosure. Is gold acceptable?"

If this was a joke, thought Croner muzzily, it was the shaggiest kind of dog. If she was real, maybe men in white jackets were lurking in the shadows with butterfly nets. She read his bewilderment.

"Stay momentarily." She walked to the edge of the dock. A dark mass loomed over the ironwood trees out of the light. It was the size of two reefers end-to-end with another pair piled on top. She spoke to a thin panel she took from an inner pocket. A shadow detached from the dark mass and moved toward them. It was an 18-inch thick slab, 8 feet wide and 12 long. It moved without a whisper and stopped an inch short of the loading dock. Stacked in the middle was a row of yellow blocks about 3 inches square. "Pick one up," she said.

Croner stepped like a sleepwalker onto the dead stable surface. His fingers slipped off a cube. They were piled three high, so he pried one off the top tier into his palm. He carried it to the platform scale inside the warehouse. He slid the weight on the beam. It balanced at just over 20 pounds. He scratched the cube with the short blade of his knife and the cut reflected light. 16 ounces to the pound and \$35 an ounce and from the way it cut, 1000 fine. He ran his fingertips over the scar and looked up with a weight of sobriety he had not felt before.

The woman had discovered the secret of drinking from a small top bottle. Croner stood and leaned against a pallet loaded with 80-pound sacks of urea. The warehouse smelled of dust, Chlor-

dane, Dieldren, 3DS 5-50 and the rest. There was a faint ammoniacal odor from the ammonium sulphate and the sacks of mixed fertilizer and no smell at all from the LA Hyperion sludge. The compressor of the coke machine started up. She tilted the bottle to get the last drops. Her neck was lovely. She set the bottle down and was startled when she burped. Croner said, "Tell me again."

"My name is Sessidondrimi," she said. "I am Coordinator for Spagassin on Guelf. Your job description would be Farmer and the gold an employment bonus." She said the wages would equal those of other section heads, she spoke of duties, rights and obligations, the term of the contract and working conditions. While she spoke, Con Croner was admiring her face, estimating the honesty of Pablo Morales, deciding a value for his pickup, tractor and equipment, and the monetary and sentimental value of his household goods.

He was also trying to remember one of Seneca's remarks. It embodied the idea that it is not because things are difficult that we do not dare attempt them, but they are difficult because we do not dare to do so. And what was the wholesale value of the warehouse stock? He thoroughly confused himself, but his feeling of profound depression was gone.

Every unsubsidized farmer is a professional gambler. He is accustomed to laying his financial life on the line every season. Croner was also a mechanic, an agronomist, a packaging artist, a jackleg biologist, an entrepreneur, a good country engineer and a pragmatist. After a year of endless work, of battles lost and hopes denied,

he was very tired. Every choice confines, but one of the gold blocks plus his equipment would more than pay his debts.

Seneca also said that when money is regarded with honor, the real value of things is forgotten. The real value here was the thin wedge of ghostly chance that everything she said was true. With what kind of coin do you pay to walk on another planet?

"Do you have cargo space?" he asked.

"20 containers like this." She spoke to the panel and the ends and sides of the slab extended up and over to make a box.

"Lady, you've hired yourself a hand."

He buried the gold under the dock except for 2 cubes he put into the safe. He wrote what he hoped was a legal power of attorney in favor of Pablo Morales and had his signature witnessed by the bartender and his wife just before the Horse closed. He wrote a quick note, "Paul, old buddy, there's this out-of-town job offer I can't resist—" He was too tired to smile and got on with it.

He cranked up the forklift and worked away the night loading the contents of the warehouse into the containers. The eastern sky was grey when he stumbled up a ramp, let the woman guide him to a shower—a warm fog of super-wetted water—and to a horizontal closet she called a sleep compartment, where he turned over twice and slept.

Croner did not see the outside of the ship for some hundreds of parsecs. The inside was only one remove from familiarity because it was designed to

accommodate the human body. The sanitary system was strange but practical, the control room had no fixed instruments but monitored every function of the ship and reported on demand, and the food satisfied hunger. He unwound mentally and physically, enjoying little surprises, the mirror that did not reflect a mirror image, the toothbrush that crawled around in his mouth to do the job, the doll theatre that engrossed Sessidondrimi.

He spent most of his time amazing himself with a learning machine. It reinforced his memory and gave the computer feedback on the assimilation process. As the pattern was established, he gobbled the language and background information necessary to function efficiently in Spagassin on Guelf. "But it assumes first principles," he said to Sessidondrimi. "Any civilization is built on surplus and I don't know anything about your agriculture."

She turned from her doll theatre. "Nararl is basic as breathing. Root, stem, leaves, flower and fruit, the entire plant is edible. Pre-space thinkers held life impossible without nararl. Your complex food chains are repugnant to any sensitive person. What other first principles are omitted?"

"I don't understand what you people want. Why should anyone build a road on a primitive planet?"

"Our motivation is to the best. Often our achievement falls short and all we do is good. The road is to encourage the transition from perennial hostility and incessant warfare to an urban culture, to liberate the genius of a race for the good of all."

"That's very nice of you," said Croner in a neutral voice.

"Our long range projections indicate

the advent of aliens, cunning monsters who will ravage civilization." She had never been warm and the look she gave him was chilly. "We know eight inhabited planets. They must be brought to an achievement comparable with our own to withstand the engulfing hordes. The future is what we make it. You are learning rapidly. I wonder—"

She turned to the console of keys controlling the doll theatre. The keyboard was the orchestra pit of a stage built into the wall. Whether it was a screen or a transparent rectangle of solid glass or an actual stage, the illusion of wooded country was uncommonly convincing, as if reality had been reduced and window framed in the spaceship.

A finger-high figure walked out of the trees into a clearing, looked around and squatted to examine the soil. It was dressed in light blue grey and moved with a deceptive plow-jockey grace. It had a tanned face, sardonic blue eyes and short, coarse black hair. It was cocky and thoughtful at once. Croner was not at all sure he liked its attitude.

"Substantial so soon," said Sessidondrimi.

The doll stood and cupped its hands and yelled silently. Four mannikins came out of the forest to greet him. The first doll laughed and the others joined the laughter. Then it pointed off stage and the four crossed the clearing and entered the trees. The doll stood with its feet apart. It laced its fingers behind its head with the heels of its hands on its ears, grinning, dominating the empty stage.

"Cold ears," said Croner with a nod. "I have the same—" He turned to the

woman. He spoke slowly. "What is this thing?"

"The chief tool of coordination. A systems analysis method, extremely dangerous to untrained minds—"

"That's me," said Croner flatly.

"The interaction of personalities takes fidelity from analysis," she said. "The correlation becomes comprehensive as the data—" She turned to the keys and the stage blurred and reformed to a high oblique view of a desert with a 60-foot-wide road cutting across. The stage swooped down to examine plodding figures walking along the road. They were muffled with stiff hides, the wind was blowing and they looked cold. They had furtive eyes in constant movement, men, women and a gaggle of children.

She was not interested. The keys were hinged in the middle and her fingers never left the board. The screen blurred to grassy plains, to foothills, to piedmont country and to the end of the road, blocked by a complex of multicolored buildings in a row. They looked lonely and abandoned. "I hope—" she said to herself, "—the multitudinous unknowns—" There was no activity, no movement but the thin snow eddying on the lee side of the buildings as the wind skiffed it off the tops. "Time lapsed and the absence of coordination—" she said as if to answer her own unspoken question.

"Something wrong?" asked Croner.

"Later—" She blurred the stage. Her fingers flew at the keys.

Croner wandered back to the library, put on the helmet and asked for information about Doll Theatres, Coordination and Roads. The answers were on an exasperating dictionary level: the Theatre was a psychologic tool, Coor-

dination was a framework for action, and Roads were for learning. The machine reminded him that his reading facility was 4 on a scale of 10.

"More on the Theatre," said Croner.

The capacity was four personalities with zero-zero withholds in an isolated situation for a limited time. With any greater number, situations, or hours, characteristics were consolidated with consequent loss of fidelity. It was possible to set a concept on the board and record, to allow time for computer function. A situation set up one evening might present a total insight the next morning. The speed of light was the limiting factor of the computer banks. At the present state of the art, no improvement had been even theoretically suggested. Now to the reading?

"Don't call me, I'll call you," said Croner. Learning to speed read from right to left and left to right in alternate lines did not seem a priority matter. He returned to the control room. "Can I help?" he asked.

"Assume coordination with no training?"

"That's moot. Did you solve your problem?"

"In what liquid are problems solvable? No. There are too many factors at this lapse of time. The situation is random. No one can precisely foresee the far future or the undocumented past because all pertinent data cannot be assembled."

"And that's a good way to run things."

"Civilization is built on a reasonably certain future."

"Is it? I've heard a reasonably certain past."

Her eyes were chatoyant red. "Idea

spinning can bind a man more surely than chains, idea spinning can blind a man more surely than night," she quoted from some unknown source and Croner recognized the enormous body of knowledge he lacked, the cultural bits and pieces, the matrix of a life on another world. "Let me take care of the future," she said firmly.

So back to first principles. "It's the journey that counts. Let the future conform."

"A farmer walking on air?" she said sharply. "I am the one who is supposed to be in danger of hallucinatory omnipotence."

He grinned. "Us farmers always walk on air." He went to see how much more information he could pry out of the reluctant teaching machine.

WHEN THEY LANDED on the roof of one of the buildings at the end of the road, a rainbow group of men and women surrounded Sessidondrimi, clamoring politely for her attention like well-behaved first graders around a teacher. Croner wore a blue grey all-weather suit and the transparent face-piece persisted in closing until he used his new learning and locked it open.

Snow was an inch deep and last year's grass waved above it. Isolated trees had pineapple-scaled bark and thin round leaves. The temperature was just under freezing. A small herd of grey animals grazing upwind paid no attention to the men. There was a green tinge to the sky and a blue tinge to the grass, but the landscape was no stranger than eastern forests to a Californian or Arizona deserts to a New Yorker. The ominous clouds over the mountains were completely familiar.

Croner felt like a geologist with a 20-ton truck load of moon rocks dumped in his laboratory. A teaspoonful was a wonder, but what do you do with 20 tons? What could you do with a whole new world except live with it? And still—a whole new world—his heart was beating fast.

"I'm Housekeeper," a bustling man in pink announced. He blinked his eyes rapidly. "What are your temperature and humidity storage requirements?" Croner asked him to say it again and this time his ear tuned in to a different voice and he understood the question. He told the housekeeper 10% moisture and a temperature at freezing plus 5 to 10% of the difference between ice and boiling water. No question, he needed more time with the teaching machine. The containers slid like drawers from the dull purple spaceship and stacked in the air. A flock of empties drifted over from an orange building and took their places.

"Coordinator wants you to see the road," a girl in white said nervously. She would be cute as a button if she was not frightened.

"How's that again?" said Croner.

She led him to the edge of the roof where a personnel platform was waiting. Croner held the rail with white-knuckled hands while it drifted to the ground level entry of a 3-story magenta building. She turned him over to a stiff young man in chocolate brown and said she would meet him later.

"I'm Brabantial," said the young man standing beside a freeform sculpture in the shape of a wedge. He touched the side and a compound curved section sank in and back. He slithered to the interior while Croner watched. The young man burst out,

tripped over his feet and explained, "I've never met an alien before."

Croner said, "Neither have I. What is this thing?"

"An integrity testing vehicle. If you are pleased to ensconce yourself we will proceed." He opened the door and Croner bumped his knee and head getting aboard. The upper half of the wedge was transparent from the inside and Brabantial settled into his seat with a sigh of relief.

"The integrity of what?" Croner asked.

"Of the road. It is an established principle of engineering that the object engineered be man-tested." The wedge began to move slowly down the road. Croner encouraged him to talk and he loosened up in the discussion of his specialty. The wedge was a gravitation effect vehicle rolling on a single variable dimension wheel. Croner showed intelligent interest and did not interrupt the flow of increasingly technical jargon. The instrumentation philosophy was the same as the spaceship except for the screen repeating the view they saw through the transparent dome, with a glowing blue dot that searched and swung to their gravitational fall point. Croner gathered they were running downhill all the time.

As their speed increased, the gimbaled seats rotated back and the dome closed down. The wheel well grew larger between them. The road began to narrow as they approached 100, a familiar enough subjective phenomenon, but Croner did not appreciate their speed until they lazed through a series of S curves down a canyon. The seats retreated to 45°, the control panel moved back and the roof closed to the high speed travel position.

When he saw the cows ahead, the grey ruminants, Croner tried to shove the floor through the leading edge of the superstructure. The wedge lifted over the beasts in a shallow arc and returned to the road without a whimper. They entered a cut through a hill and a boulder blocked their path. "Mark," said the young man as they hurtled over it. The vehicle was on automatic drive. He described the traffic on the planet of origin as having its ups and downs. Croner smiled painfully and said it was good fun to ride a skipping stone and he admired the sensing gear, but he would like a little closer view of the country.

They were crossing high desert with a mountain range ahead. Dawdling at 100, Croner had time to appreciate the detail of the road design. There were on-ramps crossing the drainage ditches every few miles and every on-ramp had a small building to the side of the access road. They were built on the plan of a tic-tac-toe drawing, mushroom-roofed with a considerable overhang. Each one was surrounded by concentric rings of level sand. He asked what was in the middle of the tic-tac-toe structures and Brabantial said, "Atmospheric water condensor. It stores and seeps to an inbuilt spring in each stall."

"Why?" said Croner.

"I don't know, but I've heard some sort of social nucleus—rest house—trading point—you won't believe it, but the wogs imitate real men. They've begun to build their own shelters. We leave a cart at each mushroom and now they're beginning to make their own carts." The road drifted up a valley and entered a tunnel 60 feet wide and equally high. There was an obstruction

at the far end and Brabantial said "Mark" as they swooped over it. "Some bull wog has decided to live in the tunnel," he said. "He's in for a surprise." He explained the roads were sacrosanct for the term of the contract, and while the wog was free to be as much of a robber baron as he could manage at the side of the road, a collector would be along shortly to clear the blockage.

They were running through fertile country with a wide variety of vegetation. Feeder roads were longer and terminated in circular enclosures protecting an acre or two. Croner was beginning to see a pattern of villages and towns, and asked about the durability of materials. Brabantial said the road was optimum, the mushroom stations were designed for moderate durability and the ringwalls decayed in a relatively short period from combustion byproducts. "That's what the specifications call for," he said incuriously. "It would be easier to build everything to highway standards."

"Um," said Croner. The intent seemed obvious. The primitives were being given suggestions but not enslaved to them. The roads would endure but the natives would be forced to their own construction methods with all the education construction implies.

They ran alongside a river, eased over a series of hills and came to the terminus of the road, a great loop overlooking an enormous bay. He yawned as they followed the loop, lined by belts of sand. He had been operating at a high level of sensory intake. The return journey should seem much shorter, and it did.

The sun was covered by clouds when they left the tunnel and the thin rain

turned to a downpour by the time they reached the canyon with the boulder in the road. Brabantial slowed the flying wedge and stopped. A monster was approaching the rock from the other side. It was longer than a freight car and extensible wings swept the surface. They folded around the boulder and it crumpled in their embrace. "Linear molecular disassociation," Brabantial said as the machine sliced the rock into cubes and cubelets and flowed them into the hopper. "The material goes back to the roadhead and Inspection can worry about a loose rock left in a cut face." The collector retracted a wing to allow passage, and they ran on home.

Home? Home is where the heart is, Croner told himself. And where is the heart? The heart is not camped out in the tules, he decided as the rain turned to sleet. Nature is great when you can take it or leave it alone, but a city is the only human environment. When there weren't any cities, man had to invent them. The road-builders evidently agreed on this planet so remote from earth. He yawned as they drove through the sleet. He drowsed.

THE WEDGE ROLLED into the magenta building and the nervous girl in white was waiting. Coordinator wanted a report. Croner thanked Brabantial for the ride, which surprised him, and got aboard a personnel platform with the girl. He braced himself to meet the storm as they left the entry, but the platform extended a field and the flow pattern around the ball of force was handsomely demonstrated by the sleet. They rose smoothly over the subsidiary structures to the largest building at the

end of the road, 120 feet wide, 6 stories tall and long as a football field. Cargo carriers were dumping material into the hopper openings of the flat roof. The platform settled into a dock just under the roof at a front corner.

"This is the factory and coordination post," said the girl in white. They entered a multilevel operations center with 20 groups of men and women at control consoles. Each coterie wore the same color clothing. Three children sat on the floor quietly playing Scissors-Rock-Paper. The girl led Croner through a curtain door to Sessidondrimi. She waved him to a chair, handed the girl a paper and dismissed her.

The doll theatre occupied an entire wall and showed the magenta building with the wedge vehicle still dripping. In this installation the dolls spoke. Brabantial was saying, "—if you ask me what a blue grey farmer is, my guess would be an illegitimate transport-construction combination—" Sessidondrimi blurred the screen.

"99-plus points probability," she said. "Were the nararl fields suitable for burying your seeds? I know you make squares for your home agricultural practice, but the shape is not important, is it?" Croner shook his head. "Our nararl sands are built around each rest house and in strips along the road." Croner nodded. "How soon can you start work?"

"It's winter, lady." He told her he had seen a rime of ice on a stream running into the great bay. He explained temperature requirements for germination and plant growth. He asked if anyone had studied the dietary needs of the natives. She said all men were the same and would eat anything

that couldn't run away. She had no idea that farming was so seasonal.

"I ought to talk with your biologist, dietician, anthropologist and ecologist—that's off the top of my head—"

"No such specialities exist. Anything else?"

"Yes, indeedy. I'll need soil analysis, some sort of laboratory and nursery, machinery for land preparation, planting tools, irrigation system, fencing, a helper—"

"Is there no end to this?"

"Those are some of the things you need to establish a viable agriculture on this planet."

"What a dismal science. If only nararl would grow! Very well. Con-croner, I want a program to include a schedule, a progress chart, inventory commitments, credit demand forecast and other standard procedure it ... Can you have this prepared and ready to implement in 40 days?"

"Oh, I think so," he said. "It looks like a long winter."

"You will have full authority in your specialty. All sections have been so informed. I have coordinated ahead for this period because I must report to Spagassin with the information at hand. I will straighten things out when I return."

"Uh-huh. Authority in my specialty?"

"As required to do your job, yes." She was the complete busy coordinator. "You may go now."

"Have a nice report," he said. "Bye-bye."

The nervous girl met him in the operations center, no longer nervous. Instead of white she wore the same color as he, except it looked powder blue on her. "I am Nallandradon." She

clasped her hands in girlish pleasure. "I am assigned as farmer-in-training to you." She clapped her hands softly.

"Welcome aboard," said Croner. "Up and at 'em. The first thing I want to find out is where I sleep."

"I don't know." She smoothed the powder blue suit. "You must ask the Housekeeper."

"All right," said Croner. "Keep in touch."

He discovered the food at roadhead was no better than aboard the spaceship, he was assigned a sleep closet by the Housekeeper, and the next morning Nallandradon was on deck to help him out. "Where is the weatherman?" he asked. "I don't know." Is there a soil chemist around? "I don't know." Why are you so happy? "It's nicer to be color than white." Why? "I don't know." Who does know? "I don't know."

He decided the first order of business was orientation and she followed behind as he explored the road factory. Aside from the operations center, the top floor was computers and support interrupted here and there by materials chutes. The next four down were classification, manufacture and storage. The first floor and basement were devoted to product assembly, carried out in an open pit nearly as wide as the building and a third as long. The earth was removed at the leading edge to a depth variable with the condition of the soil, but never less than 6 feet. It was flowed up and away for processing. Croner was fascinated.

"Is this what farmers do?" shouted Nallandradon.

A thin shell was spun in place for a culvert. Lengths of tile whipped from sidewall apertures to position and were tacked by an impermeable spray.

Two feet of ringing hard gravel was laid in 6 inch lifts, bound by a slurry flooding the interstices. Lifts of gravel in diminishing sizes carried the foundation to within 18 inches of the finish surface. A quarter-inch wire was placed in the center of either side. Hundreds of taut cords were pulled longitudinally and locked in tension by paste laid in inch-high corrugations. Right-angled lines were fixed in the troughs, the corrugations were partially filled with paste and the buildup of crossed lines continued in diminishing waves to the surface, woven with small orifice spinnerets, giving the road its characteristic heavy canvas finish.

The noise was a continuous thunderstorm mixed with the high hiss of the spray heads. A man in primrose yellow plugged a line from his suit to Croner and to Nallandradon.

Croner said they were farmers and asked why the corrugations near the surface? Primrose said they increased the tensile strength of the material; a beam so formed would support a dead load the length of the building. The road was running straight with no superelevation and construction was at an ambling pace, perhaps a mile an hour. When it slowed to a dead stop Croner looked up in surprise. Primrose said he was operations engineer and the pause was for abutments and wingwalls of a bridge. Asked about tilling the soil, Primrose said he didn't know, but he'd heard something like that was done by the barpit rig for onramp roads.

The building started slowly forward and Croner watched the parabolic arch grow from the abutment. The daintile was now flat extruded stripping and he asked about it. As best he could

understand, it was a gravitational inductive material and this was why the gravel fell so fast and there was no dust. The road was built in a 4 gravity field to assure greater density than was otherwise possible. Nallandradon said she was getting dizzy.

Croner thanked Primrose, they unplugged and left the road building building. The smaller structures trailing independently behind were material processing units, community accommodation with schools and enclosed exercise areas, onramp road constructors and mushroom builders, and the last was the magenta repair, inspection and testing building.

Nallandradon protested when he wanted to walk on the surface of Guelf and he told her farmers often did this sort of thing and she would have to become accustomed to it. They slogged through ankle deep snow on a bright green day. She walked so apprehensively close to him, he had to steer her away to avoid veering. They stood to one side of the building building and watched the soil crumple into the maw of the advancing road. Trees, grass and brush had been removed 80 feet from either side of the centerline by some pioneering process. He asked what happened to the organic material and she had no idea. He looked up at the cargo carriers constantly feeding the topside hoppers and asked where the borrow pits were established. He explained compaction and construction above existing elevation took more material than the level ground afforded. She didn't know about that. He asked what sort of preliminary survey was made and she shook her head without embarrassment. He asked patiently what she did know. She replied

that she had been Nararlist and nararl would not grow on Guelf.

"Uh-huh," said Croner. "I think I begin to understand. And I have the authority of my specialty."

WHEN SESSIDONDRIMI RETURNED from Spagassin, she immediately sent for her farmer. "You are unpredictability incarnate," she said. "It is impossible to coordinate with you on this contract. You make the future a flux of potentiality." She turned to the keyboard of the doll theatre.

Croner was on stage, masterfully kissing Nallandradon. The girl melted in his arms, her face vacuous with passion. The two figures slipped into a sleep closet.

"And it never happened." Sessidondrimi was indignant. "Fact does not follow prediction with you—this is intolerable. Look!"

There was Croner again with a woman in housekeeping pink. He kissed her masterfully and they disappeared into a sleep closet.

"Out of your color!" With great effort she spoke calmly. "But it never happened. Concroner, the function of Coordination is to search and achieve optimum futures. When I brought you here we were 10 days behind schedule, and after 40 days of your presence and my absence we are ahead by 19 full days. How do you explain that?" She didn't wait for an answer. "By this projection the contract will be completed in 3 years instead of the 7 remaining."

"I don't plan on farming that long," said Croner.

"I do the planning!"

"Then plan to save 110 days on the dam."

She caught her lower lip between her teeth. She turned to the keyboard. The doll theatre showed a view of rough terrain cut by a sharp canyon. She stabbed at the keys. Day followed night with increasing rapidity. The building building was upstream from the canyon constructing an open trench to divert the water of the river. Enormous spoil piles were stacked on either side of the ditch. When the drain was completed, the building lifted carefully back to the beginning. With the plug cut the river tumbled into the new channel and work on the dam was begun. Day and night blurred as the dam rose and the road was completed over the top. The building returned to the channel, blocked the diversion and filled the ditch with the spoil piles.

She sighed with relief.

Croner leaned over her shoulder and tapped the keys of the doll theatre like a two fingered typist. "This is how it is in real life," he said. There was the same view of the canyon, but there was no river. The stream bed was dry. The keyway had already been excavated by pioneer machines. The key was being filled by a steady run of cargo containers.

She wailed, a low ululating noise.

He tapped the keyboard slowly. The scene shifted some distance upstream from the dam. A collector sat in the rocky river bed with its wings extended bank to bank. A column of water 26 feet in diameter flowed straight into the sky. He moved the keys and the scene backed off. The column looked like the string of a balloon, holding an enormous ball of water three miles up in the air. "We'll lower it down gently

(Continued on page 127)

IN MAN'S IMAGE

TERRY CARR

(Cover Story)

Illustrated by MIKE KALUTA

Terry Carr spends much of his time editing the Ace Science Fiction Specials, but will probably be remembered better by many readers for his too-infrequently published stories of hauntingly alien moods—"Hop Friend," "The Dance of the Changer and the Three," and, in our May, 1970, issue, "The Balance." This time he writes a story about the last man alive . . . and those who would help him remain alive . . .

I AM QUITE BEAUTIFUL, truthfully, built in the image of man though of course I am not an exact copy. But I have two arms and two legs, each articulated once at elbows and knees and each having either hands or feet.

I have a head also, which contains my sensory organs for sight, sound and radio; unlike humans, however, my logic processes are housed outside my head, mostly in my torso, though I also have a radio link with the public computer. Good for calculations of all kinds, nearly instantaneous when I might take seconds, minutes. I never have to guess about chances; pubcomp calculates them for me.

Pubcomp says it is 98 to 3 that there is a human being alive in the city.

That is the easy calculation: "a human being." But when we begin to speak of *the* human being, calculations become less sure. Pubcomp says it is .009% possible the human is in my city

sector, and that is one of the highest probabilities, so I am searching diligently.

The other cities report no humans since two years four months plus past, so our human must be the last. (Correction: with all factors calculated, there is .000000012 chance of another human on Earth. But that includes such hypotheses as human mutations to enable them to extract oxygen from oxides of sulfur or nitrogen. I ignore this hypothesis and others like it.)

I have quartered my sector, and I have eliminated three of these areas. What is left is not large: there are many of us in the city, having moved here from other cities as they became empty of humans, so each of us has a sector that is small to begin with.

(Few of the others are as beautiful as I. Most were built as street sweepers or industrial workers, not as wide-purpose wardens such as I. The older

types—pubcomp designates them “classics”—have been redesigned and retooled for perception, and they search too. But they are not beautiful, and I hope that when the human is found it will be by me or at least someone as beautiful. Would the human want to be rescued by a sanitation burner?)

The area I have left to search consists of one street three blocks long. Most of the buildings are low, five stories or less, but one extends to the dome. There used to be luxury living quarters there, but of course we haven't been able to keep them up; the classics that used to service them were repurposed as wardens like the rest of us. Why upkeep living quarters when there are no humans to live in them?

Still, I am thinking about that building. I believe I understand humans better than others of us do; I think about them a great deal. I try to think like a man. I am looking at that building now, thinking like a man, and it appeals to me. I think I like heights.

I am going in. The lobby's carpet is dark from oxidation, and I note that the air circulation no longer works. Will that matter to a human? No—why should he care whether unbreathable air is regularly replaced by other unbreathable air?

One bank of elevators registers non-functioning, but the other is in working order. Is there any way of knowing if these have been used recently? Pubcomp says no data. Doors open smoothly before me, though there is a slight rasping of metal on metal. No serious malfunction; the elevators are safe to ride.

I step inside one of them and look at the bank of buttons; the numbers



go up only to 25. I punch 25, but nothing happens. I press the button again, and then press 24, 23, 18, 2. The elevator is motionless.

Pubcomp says the buttons are operable by human body-heat. I feed current through one of my metal fingers till it is 70°, and again I touch the 25 button. It lights up, the doors close, the elevator begins to rise.

I look around the elevator cubicle. Some of the lights in the ceiling have gone out; plastic handrails are corroded from exposure to the air. The rug is darkened, like that in the building's lobby, but in the uneven light I see markings that look like footprints.

I bend to look closely. They are footprints—*shoe prints*.

Was it my human? How old are these prints? I compare them to the marks made by my own feet, and see little difference. My prints are more deeply imbedded because of my greater weight. There is another difference: the human's prints are linked by drag-marks. Is he weak, sick? (Of course he is; it is a wonder he remains alive at all.) The prints move back from the panel of buttons, uneven prints (staggering?), and I believe he fell against the plastic handrail to hold himself up. (78% chance.)

The elevator stops, the doors open. I exit, looking for the elevators going to floor 50. There they are, to the right. On this floor's elevator lobby is a barber shop whose striped pole still revolves, a Bew-tee Parlour with lettering flaked and peeling from the window, a candy and gum machine: the glass of its front has been smashed.

I look for shoe prints leading from the elevator I have just left to the elevators leading higher. But there are no

shoe prints, no marks at all on the carpet.

I pause, studying the question. The carpet is a richer red than those I saw in the elevator or the lobby downstairs. I look again at the glass front of the Bew-tee Parlour, the barbershop: the glass is almost clear, untainted by the air here.

The building was totally air-conditioned, says pubcomp. But that system has broken down, as I have already discovered. Conclusion: since the breakdown, no air has been pumped in from outside; the air here is twenty, forty, fifty years old.

If I were a man, if I breathed, the air would smell "musty," "stale." But it would be far more breathable than the air outside.

I am sure now that my human is here, in this building. But with no shoe prints to guide me, how shall I find him?

I think like a man again. I believe he has continued to go up in the elevators. Probably to the top, to the dome itself. Humans are drawn to heights; that is what makes them human.

I follow my human upward. I step into the next elevator, heat a finger, press 50. The doors close, the elevator and I rise.

I exit at 50. Here there are ice machines, a gum-ball dispenser, a shoe-shine machine, the entrance to a gymnasium. The globe of the gum-ball dispenser has long since been smashed and emptied; plastic shards are scattered on the carpet. The ice machine still works, though its interior is frozen solid. The shoe-shine machine has been recently used.

I look at the machine, at a spray of crusted shoe polish that was thrown out

onto the carpet from the buffers and rollers as they turned for the first time in decades. I touch a roller with a finger and dry but not powdery polish comes off onto my metal. I send current to the finger and the brown coating blackens and drops away.

I look around the lobby of this floor. There are between five and eight apartments on each floor of this building; my human could be in any of them. Odds 657 to 1 against any individual apartment (first 24 floors eliminated).

I do not believe he is in any of the apartments here. I believe he has gone on upward.

I enter the next elevator, go to 75. A self-service supermart is here, its doors wide open, its shelves long empty. I hardly pause; I go on to floor 100. The Century Note nightclub stands dark and empty; someone has scratched out "Century" and written above it "Helluva." I go to the next elevator, to floor 120.

There are no shops or services on this floor except for another ice machine; the floor is occupied only by apartments. I enter the last elevator, press 130 and am taken to the top floor of the building.

Here is the Top o' the World Bar & Lounge, very famous. The view was spectacular when the air was clear. In latter years its tourist business declined, but the residents of the building continued to come up here. They were humans; they were drawn to height, even if only metaphorical, with a view of grayness outside and below.

Metal stairs at the end of a corridor lead up to the city dome, where there is an exit to the empty outside. That is where my human will be, and I hurry

upward, worried now when I think of human lungs trying to breathe the air of the sky. How much worse is it than the air inside the dome? (Only 27% more pollutants, says pubcomp, 6% of them toxic. Not as bad as I feared, but I hurry anyway.)

The port is round; I press the button that slides it back into the dome, and I step outside.

There is no one here. I stand outside a bubble atop the huge dome of the city, and it is empty. Did my human step out here, try to breathe the air, collapse and slide down onto the dome proper? I search the metal expanse of the dome on all sides of the bubble, but there is no sign of any human figure. I was wrong; he did not come up here after all.

(What was the probability to begin-with?—I never thought to consider it. 2.1%, says pubcomp. I would feel like a fool, but pubcomp does not think like a human. I believe the chance was greater.)

There is nothing up here. The sky of early afternoon is red shading into brown. The moon, swollen with proximity to Earth, dominates the horizon, clearly visible in the dark day sky. Its color appears yellow seen through Earth's waste-laden air; its mares and mountains are indistinct.

Once men walked on that world—over three hundred years ago. On the planet Mars, also. The exhaust of their rockets is still carried in the air.

Closer to the city, mountain sculptures stretch for the sky. They are not real mountains; this is a desert area. They are constructed of metal and plastic and they angle into the sky purely for the sake of beauty. Men

built them. Most have turned dark from chemical reactions with the air, but there is still one that retains its original bright colors.

I stare at them all, the bright and dark ones alike. Men built them for beauty alone, those huge jagged cliffs and colors. I have never seen them before, only televised images in my head. I think if I were a human I would be moved; as it is, I stare and wonder. Are they still beautiful, even marked by the corrosion of time? I think so, but would a man think so?

I must find my human; he can tell me. I turn and go back down the ramp, closing the port behind me.

Standing in the lobby of floor 130, I recalculate plans. Odds 657 to 1 against his being in any individual apartment of this building; chances much greater that he is near the top of the building. I shall continue to think this way.

I hear a noise.

Instantly I am analyzing and triangulating the sound. It was something falling in the Top o' the World Bar & Lounge. It could have been anything: a piece of a table falling away, plastic from the ceiling, anything. Never mind; I feel a certainty.

I enter the Top o' the World. There is darkness to my right: a coat room. The lounge itself is dim, many of the lights no longer working, some actually smashed. There is a long bar to my left, and there all the lights are on.

There is another noise, and it is from the bar. From behind the bar. A scuffing noise, fabric on fabric. Clothing on carpet. My human is hiding behind the bar.

I walk around the open end of the

bar and look inside. He is there, lying on the floor.

He looks at me coldly for seconds. His face is gray, traced with scarlet veins. He is breathing shallowly.

He draws a full breath, and the sound of air passing into his lungs is thin. I don't believe there should be any noticeable sound.

"I broke my fucking ankle," he says.

I see this is true. He has it drawn up to where he can cradle it in his hands. His shoe lies beside him.

"Bastard hurts," he says. "It's killing me, God damn it."

I move to him and bend down, but I do not touch him. "I am not a medical crewman," I say. "But I am sending for help." Simultaneously I have been radioing our position.

"Fuck you," he says. "Fuck your medicine, fuck your help. Inject me with high octane and let me alone." He raises the bottle he has in his hand and drinks; then he chokes, and begins to cough. He does it wearily, with no surprise. When the spasm passes he drinks again.

"It was my function to find you," I explain. "Others will help. They can stop the pain of your ankle."

He drags himself back to lean against a glass cabinet, wincing. Without looking at me he says, "Can openers."

"Excuse me?"

"Fucking lawn mowers," he says. He coughs again.

Six minutes till the medical crew will arrive, says pubcomp.

"I have nothing to do with lawns," I say to the human. "I am a warden."

"You're a drawbridge," he mutters. You're a fucking drawbridge. No no, you're a stapler. Stapler." He laughs, wheezes, coughs. The

spasms cause him to move his foot, and he groans in pain.

I watch. There is nothing I can do for him. Five minutes thirty-seven seconds to go.

He leans back against the glass cabinet and breathes carefully, getting it under control.

"You can't help me," he says. He is still not looking at me. "Fucking stapler could help as much. Staple my foot. Staple my chest. Staple my fucking head."

"That would not help you," I say. We are not talking about the same thing, however; I know it, but he is giving me no clue to what he is really trying to say.

He does look up at me now. "Christ. You're a vacuum cleaner."

"I was never tooled for maintenance," I tell him. He is drinking again. He must be very drunk.

"You're all vacuum cleaners," he says. "Vacuum cleaners. . . . Tanks. Bazookas. Fucking riveting guns. Garbage trucks. Walking typewriters." He drinks till the bottle is empty. Coughing but not paying attention to it he swings the empty bottle against a glass cabinet next to him; the glass smashes and he reaches in to take a bottle of clear liquor. He begins to drink it, grimacing. His face, which was gray earlier, is nearly blue now.

Four minutes seven seconds more.

"I admire humans," I say. "We all do. We try to help you."

"Fuck you. I'd rather have a dog." He breathes, breathes again. "Jesus Christ, I've got a city full of putt-putts that want to take care of me."

"We truthfully do want to take care of you," I say. "We can heal your

ankle. We can give you an oxygen-rich environment."

"I know, I know," he says wearily. He drinks.

He stares dully at me. He coughs once, then doubles over and begins to vomit. It splashes against the glass and imitation walnut side of the bar. He breathes in gasps, coughs, chokes, vomits again. There is no expression on his face.

It does not take long till he stops. He leans back weakly, getting his breath. Three minutes eighteen seconds more.

Finally he says, "You admire humans, do you? You admire puke and everything?"

I say, "Whatever humans do is necessary to being human." Was that the right answer? It is true.

"Oh shit, you're a can opener. Quick, divide 3,468 by 2,125."

Pubcomp answers and I say, "1.06032. Exactly."

"Christ," he says. "Do you care about that?"

"Only because you wanted to know."

"I didn't. I thought it might be funny to see you answer. You *are* like a dog. Do you shit on the grass?" He drinks.

"No. Did you really want me to answer that?"

"Jesus it stinks here. Pick me up and move me somewhere else."

I bend to do this.

"*Gently, God damn you!* Fucking foot. . . ."

I am as gentle as possible as I move him around to the outside of the bar. When I put him down he is saying, "Shit shit shit shit shit," quietly but intensely.

One minute fifty-four seconds.

He settles himself, wincing. "Bend your head down," he says.

I do as he says. He pats the top of my head, then begins to chuckle. He stops when it threatens to become a cough. He gets his breath and says, "Would you like me to scratch you behind the antenna?"

"Excuse me?"

"Forget it." He drinks. "'We honestly want to take care of you,'" he says, trying to imitate the comparatively flat quality of my voice. "Why?"

"We admire you. You made us. Humanity is a great race."

"Oh shit, who told you so? Humans." He closes his eyes and I see he is resisting another coughing fit. "We made garbage trucks too. Made bombs and dum-dum bullets and puke gas. Killed each other, put a lot of shit in the air, killed ourselves. You looked at the air lately? Shit, even the domes didn't help."

"We can give you enough oxygen to breathe."

"Swell," he says. "While you're at it, cure my emphysema."

"No, we cannot do that," I say. Does he really have emphysema, or is he taunting me?

"Then fuck you," he says, and slumps back against the bar. "Staple my head," he says vaguely. He lifts the bottle, judges how much is left in it, drinks three, four, five, six swallows. He almost chokes. "Fuck you, fuck you. Go mow a lawn."

The medical crew arrives. There are five of them. They surround him, because we have had some humans try to fight us.

"His left ankle is broken," I say. "Be very careful."

"We know about pain," says the head of the crew.

"Like hell you do," the human says. Two of the crew lift him gently and put him on a rolling stretcher. One wipes vomit from his clothing.

As they start to wheel him out he looks back to me and says urgently, "Hey, stapler, quick, gimme two bottles. Bourbon, scotch, anything."

The crewmen make no objection, so I do as he says. He takes one in each hand and smiles weakly, "Good boy, Spot."

They wheel him out. I tell the head of the crew that he may have emphysema. He acknowledges the information and leaves.

I am alone in the Top o' the World Bar & Lounge. I think about the human for minutes after they have gone down in the elevator. Does he know he is the last? Does he hate us, the machines? Does he hate his own kind? Does he hate himself?

Pubcomp says insufficient data. But I have opinions.

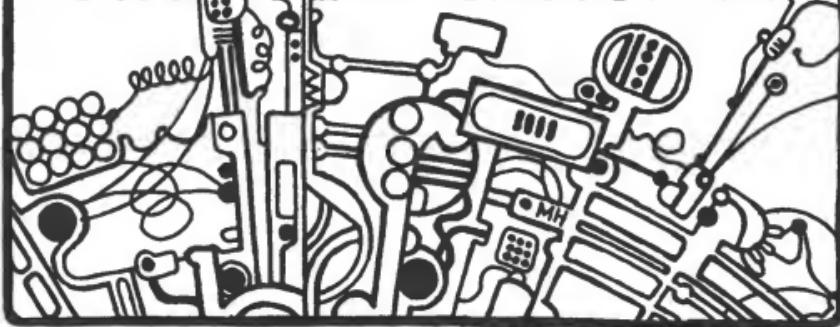
I leave the Top o' the World and go to the stairs leading up to the outside of the city dome. Near the foot of the stairs are discarded parts from the mechanism of the port; I pick up several and take them with me as I climb.

I pause at the top of the stairs to look at the mountain sculptures. They are many miles away and I will not be able to reach them before tomorrow. But I believe I can climb them. In places they are probably unsafe for my weight, but I believe I can judge this. I believe I can climb all the way to the top of one of them. That one, the one that retains its colors.

(Continued on page 110)

GREG BENFORD & DAVID BOOK:

The SCIENCE in



SCIENCE FICTION *

MAN'S BEST FRIEND

It has happened to nearly everybody by now:

The utility company, say, sends a brightly colored puff sheet along with your monthly bill. The sheet announces that henceforth, billing and quite a few other operations will be done by computer. Service will become both cheaper and more efficient. There are a few pictures of clean-cut executives inspecting the banks of solid state electronics, looks of befudlement almost completely concealed by the cameraman.

A month passes. Your next bill arrives. It says you have used 1,546,589 gallons of water, at a cost of \$2,847.17.

The computer has made an error. Some people get angry; others don't care, and assume it will be corrected. But quite a few of us laugh, show the bill to friends and family, and generally enjoy a joke at the expense of a machine.

One reason for the mirth may be that we are just a little afraid of computers. Man is undoubtedly master of this world, unique unto himself, but ever since the

Copernican revolution his self-image has taken a beating. First he learned that the earth was not the center of the universe, then that the sun wasn't either. Darwin displaced man from his unique theological position by showing that he evolved from lesser primates. Recent research is showing us more and more signs that we have basic, instinctual portions to our makeup that seem unalterable.

John Barth's wry dictum, "Self knowledge is always bad news," may well apply to man's quest for an understanding of his place in the universe. In the next few decades our society is going to test this in a way few would have imagined even thirty years ago. We will have to learn to live with another intelligent species, one of our own making: computers.

The man who gets a garbled bill in the mail scoffs at the computer, but in nearly all cases he blames the wrong party. Bills for a million gallons of water come from what are called programming errors—mistakes made by humans. The computer itself simply carries out orders. If the orders

are wrong, it is not surprising that the results are unsatisfactory.

The United States is in the forefront of computer development, yet even here computers have not had truly major impact. Although they handle airline scheduling, bookkeeping, college registration and a host of lesser chores, they have not directly affected the ordinary citizen. All this is about to change, and hardly anyone is prepared for it.

Sometime around 1975, a new appliance, the home computer, will probably begin to appear in American homes. At first only a few will have them, but as the cost declines more and more will be installed, using existing telephone lines. It will most likely be no larger than a suitcase, with a display screen, a typewriter console and numerous buttons visible to the operator.

Like the telephone, the radio and utilities systems, the home console will be only the visible tip of a vast electronic iceberg. It will be a remote segment of a network centered on a distant electronic data processor uniting the roles of switchboard, storehouse and calculator. "Real time operation" makes this arrangement possible. The central data processor will handle each customer's job in bits and pieces, sharing its operation among many customers simultaneously.

Each console will seem to command the entire system. In effect, the user will gain an intelligent assistant who can perform tasks with lightning speed. Used in research, this setup lets the user develop "cut and try" solutions until he can clarify the problem in his own mind. In the home it will present him with a ready-made package of services and show him how to improve on these to meet his needs.

The immediate effect of a handy home computer "terminal" will be a change in the things that can be done while staying home. For some people this simply means calculating income tax or organizing a

budget will be easier. But for those in technical occupations, the terminal will represent the final liberation from the daily nine-to-five routine. There will be no reason to go into the office if all the tools necessary for research and engineering can be had at home. In an age increasingly troubled by freeway jams and smog, any reduction in the commuter traffic will seem a blessing. A husband and father who doesn't waste many hours commuting might also help preserve the "nuclear family" that some sociologists feel is steadily declining.

Around 1980 the home computer terminal will acquire a print-out device. This may take several forms. One process under study is an old idea whose time may yet come—the microfilm library. Computers can already "squirt" impulses over telephone lines at an unimaginable rate. The terminal converts these impulses into words and then transcribes them electronically onto microfilm. A single spool half an inch across can contain an entire book.

The trouble with this notion is people. Microfilm has been around for decades and the major libraries store many of their infrequently-used books this way. But the public have shown a noticeable reluctance to use microfilm scanners and projectors. There is something pleasurable about cradling a book in one's hands. So a home microfilm unit, even if it is placed on the market, may be a flop.

Some laboratories are attempting to fill the gap with a totally new process, based on today's ubiquitous Xerox-type photocopiers. Instead of imprinting the transmitted book or magazine on film, the home terminal will make a copy on real paper, electrostatically "fixing" graphite into letters on the page. It may even bind pages together like a book. With mass production, such a device should not be very expensive, particularly when society wakes up to the fact that a home printer in-

troduces a new age of communications.

The overwhelming lesson modern city planners will have to learn is this: It is easier to move information than people. And after that, a second lesson: Paper is heavier than electrons.

The first rule implies that, whenever possible, computer services should go to the people, rather than the other way around. By 1980, remote consoles may well be as common as desk calculators are now. Not only engineers and scientists, but clerks, bookkeepers and many salesmen will be free to work almost entirely at home, using computers, teleprinters and face-to-face television. Service occupations—at least the ones which rely on supplying ideas and information—will become decentralized, relieving some of the pressure that leads to urbanization.

The second rule means, eventually, the end of the Post Office Department. (Some readers will find this a pleasant prospect, considering the quality of service.) After all, what is the point of logging your water consumption rate into a computer, having it print out the bill, and then sending the piece of paper on which it is typed through the mails, where it must be carried by hand?

It seems far easier to let electrical impulses, flowing from the computer through your telephone wire, carry the message. It can be printed out on your home photocopier and paid if you find no error.

In fact, why not take it one step further? Unless you respond to the bill, it will be charged by computer against your bank balance. This way a correct bill needs no reply at all.

That takes care of the water bill. But anything printed can follow the same course. No longer the *thunk* of a soggy newspaper into your prize rose bushes—just request that your copy be printed out every morning at 8 A.M. The news in it will really be news, too—not simply what

was new last evening, when the ordinary printed newspaper was set in type.

What can be done for bills and newspapers can be done just as easily for books from a computer library, magazines and even personal letters. The only thing transmitted from one point to another will be information, impressed into the oscillations of electrons. And delivery will be instantaneous.

Of course, this kind of library uses a lot of paper. Instead of queuing up at the end of a six-month waiting list, everyone who requests the library's latest best-seller will get it—one copy per reader. After copyright fees are paid, the cost will be little more than the cost of paper; but what does the reader do with the book when he's done? Recycle it, of course—along with the news and all the scraps of paper we now have to keep for records. This recycling service should—and probably will—become commonplace.

The fully computerized home will be a kind of inhabited robot. It is impractical to build appliances with self-contained circuitry more intricate than that required to allow an oven to turn itself off when the roast is done. That's why we'll never have vacuum cleaners that clean the house by themselves or dishwashers that clear the table, wash and put the dishes away where they belong. These tasks are too complicated; they require too many decision processes and too many different operations to build into a small inexpensive machine. But wire all the household gadgets to a large flexible computer and they become a staff of docile chambermaids and kitchen knaves.

Take vacuuming, for example. Suppose that there is a grid of wires underneath the rug, with a tiny current flowing. Suppose the chairs and tables and other furniture have metal plates in their legs and bases, each of a different size or shape. Lying above the grid, these plates respond

to the current in the floor by developing induced currents. They in turn react back on the grid. The resulting disturbances in the grid current can be analyzed to show where each object is standing. Now imagine a self-propelling steerable vacuum cleaner controlled by the central computer. If the computer reads the location of each object in the room from the grid current, it can guide the cleaner around the room, avoiding furniture without missing any part of the rug. A housewife can show the computer how she wants her room done, and thereafter it will be done the same way every time. If she moves the furniture around, the computer can still tell where everything is and adjust its pattern accordingly.

The beauty of this design is its simplicity. No expensive machinery is needed in the individual home, only some minor electrical work and a vacuum cleaner that wheels itself around. Such a system has countless applications. The householder can arrange for computer control of almost any chore, from mowing the lawn to opening the door for his cat. This flexibility will be a big selling point. The same computer service that prints the news and keeps the budget can handle a houseful of automatic appliances. In fact, by proper scheduling and time-sharing, it can serve thousands of homes.

What we have done up to this point, of course, is to present a tour of the conventional wonders of the near computer age. But this type of discussion really only skins the surface. Like women, computers make excellent servants, but they are far more interesting as companions and equals. And that is precisely the future that faces us.

Virtually all computer experts are agreed that we have only about 15 years until an essentially new form of intelligent life is born on this planet: the self-programming machine.

The public got their first taste of this in the Kubrik and Clarke film, *2001: A Space Odyssey*, where they met HAL, the first literally superhuman character ever made believable. HAL stands for Heuristically programmed *AL*gorithmic computer, which simply means that HAL can teach himself how to do new things, just as a man does. As he learns, he grows new neural networks to cope with his new functions; thus, he is more adaptable than the spacemen with him in the probe. But his trump card is his control of the life support systems of the ship. He knows his way around the ship better than the men do and can anticipate what they will do.

It seems likely that a machine such as HAL will be operating by 2001. Even before that time, HAL-like computers will have assumed a major part of our economic management. Their influence there will give man additional cause to wonder about his ultimate place in a man-machine world.

The Third Industrial Revolution—automated labor, presided over by machines of nearly human skills—has already begun. Machines are as able as men in certain limited situations, and they are rapidly losing their limitations.

Thus far, computers have supplanted men only in rote jobs. It is quite easy to control lathes and other shop machines using computers which can *only* do that. But as the years pass, analysts will reduce one job after another to its essentials, program it and turn it over to a box of electronics—which doesn't hanker after coffee breaks, cost-of-living raises or retirement, and doesn't get sick.

How far will this process go? The answer depends both on the ultimate cost of computer components and on the types of jobs that will exist in the future. That computerized water bill casts a long shadow—it is not hard to foresee almost all accounting operations taking place deep in transis-

torized innards, rather than in a ledger or cash register.

Other occupations are not so simple to analyze. It is natural to think first about one's own job, so you might try this simple problem in systems analysis. First, break your job down into two categories, *operations* and *decisions*. Operations are what you must do physically to accomplish your daily tasks. This might be as easy as picking up a pencil, or as strenuous as climbing on steel girders. Decisions are the judgments you make, like weighing the advantages of different sales procedures, the abilities of people competing for a promotion, or the effectiveness of a certain tool in cutting a metal die.

Experience has taught us that any repetitive physical process can be controlled by a computer. The important point is that the job be predictable. This means a limited number of parameters describe it, and these are the sort that can be written down. For instance, computer-operated lathes need to measure only the dimensions of the metal rods they are to cut, and elementary (though tedious) arithmetic will tell the machine which bit and angle to use.

The same rule of thumb holds for decision-making: if it is possible to write down a set of rules describing the process, a computer can reproduce it. Computers already can decide when to update an inventory, how to set a column of type, what move to make in a chess game or a stock market model.

So this is what it boils down to: Can you imagine a machine built to carry out the same operations you carry out? Can you *tell* someone how to make your decisions, draw up a set of rules that will enable him to make them without help? If the answer to both questions is yes, you might start thinking about alternative careers.

The 1980's will probably see increased interest in this theme, for by then most

people will be aware that computers could edge quite a few of them out of the labor force. As a general rule, jobs with repetitive operations and few decisions will soon be done by computers. Simple decision-making jobs will be the next to go. But jobs that require contact with people on a human, personal level will remain, and so will those that require great dexterity or agility. Examples are TV announcing, psychiatric nursing, haircutting, massage and professional football.

But what about innovations and creative acts? It may prove simple to design a machine which will, say, minimize the number of trips a delivery truck makes. It is thus far impossible to program a computer to spontaneously decide in the interests of efficiency that the delivery service join a conglomerate corporation which will sell it packaging materials at a discount.

To be sure, a computer might reach just such a decision if its designers set out to give it that ability. But then it is doing nothing more than it has been told to do. We have yet to demonstrate undeniable creativity in a machine. Some people insist we never will.

As always, the issue will turn on precise definitions. We do not understand the creative process in humans, so it is doubtful that we will have the wisdom to build it into machines with forethought. The art of doing something for the first time seems to stem from a certain freedom of choice in the intellect, and it is just this element that has been missing in computers thus far.

Things will not remain that way, however. Within ten years the world champion chess player will certainly be a computer program—one is already ranked quite high in competitive play. Some might argue that playing chess is not particularly creative, but few would say the same about writing novels or poetry. Yet computers

now can write simple poems (quite bad ones, granted) and they are improving all the time.

The usual theoretical argument against machine creativity stems from a simple analogy with the human brain. There are several million million connections in our brains. This is almost a million times the number in the biggest computers of the present day. Though computers are growing continually, it is unlikely that even the year 2000 will see a machine with this many connections.

But this argument is too simple-minded. Writing a poem doesn't occupy all of the brain. The first sonnet-writing program or computerized music arranger will devote itself to its specialty with a fanatic's disregard for all other intellectual pursuits, even closely related art forms. And not all creative activities make the same demand on the creator. The difficulty of a particular achievement reflects the number of choices and steps involved, the number of possible alternative concepts. This is why serious literary critics have little regard for whodunits. But by the same token, in a decade or two our research laboratories may well have computers programmed to write acceptable potboiler detective novels. By the time that happens, the smug voices now predicting that computers will never be truly creative may have a strained edge in them.

Even so, there remains the question of taste. It may seem absurd, now, to apply such terms to a work of copper and germanium, but there is a distinct possibility that this question will face us quite soon. What if a computer does write a sonnet some bright spring morning in 1987? Will it "feel right?" Will it be good, not only by the standards of a program a scientist has written, but by literary standards? Will this sonnet have the power to move us emotionally?

The answer depends on whether it is possible to write instructions that tell a machine how to anticipate the emotional reactions of people to what it has written. Perhaps there is a basic difference between organic and electronic "personalities." Our brains are stimulated and controlled by the secretions of glands; the sight of a leopard creeping toward us through the grass causes adrenalin to pump involuntarily into our blood stream, changing our thought pattern and emotional balance. Computers have no such mechanism (to say the least).

But they may be programmable so that they *appear* to. This question of appearances is really the crux of the matter. Computers do not duplicate human behavior, they *simulate* it. A machine which can tell a hawk from a handsaw does it by following a complicated set of instructions, contrasting the light and dark areas, rotating the object to obtain a full view, and comparing with its inventory of images it has seen before. The human mind does something of this sort, too, but in a manner not understood.

The problem is to make a selection of what is essential to the image, to look at trees and somehow see a forest or an orchard. If you see a chair with three legs or upholstered in fur, how do you know it's a chair? How do you program a computer to recognize it?

One approach is to sample the image by viewing it through templates. These mask all but an irregularly shaped portion, different for each template, so that only a little light reaches a photodetector. The computer records the amount of light passed by each template—perhaps several hundred entries—and compare this set of numbers with those corresponding to previously scanned images of a man, a table, a chair, a house, etc. The computer performs statistical comparison tests to see which "memory" the present image most

resembles. It is just as if the six blind men trying to "see" an elephant by touch had gotten together and recorded all their impressions, and called *that* a description of an elephant.

It is doubtful that this kind of perception is much like our own visual sense. That doesn't matter. Scientists are content to design a computer which can do a given task; they cannot guarantee that it does it the same way we do. Curiously, what for us is a simple reflex-recognition of an acquaintance—is very difficult for computers. No machine program can yet faultlessly recognize an individual in a crowd, or if the lighting is not just right, or if the subject is wearing a hat or smoking a cigar.

This points up the limitations of today's computers with their water bills, compared to those we can expect in the future. For what it is worth, few of the men who devised the first computers in the early 1940's foresaw the uses of today. Then the machines were idiots savants, performing the laborious calculations needed by scientists. In their dealings with humans today, the machines resemble small children, barely able to tell friend from foe.

Soon they will be able to do many things better—or at least cheaper, which is almost the same thing—than men. How mankind feels about their progress, rather than scientists' inventions, will determine their development from that point onward.

Technological advances have generally created more jobs than they have eliminated, though this is no comfort to the man who is out of work. The Luddite movement of early 19th century England attempted to stop the relentless march of industrialization by smashing machines. But such violence has never worked in the long run, because the changes never affected a majority of the work force at once. Besides, men seem unable to keep from tinkering with machines to improve them.

Whether this will hold true in the future is anyone's guess. Our society will have to deal with a rising "slave" class with increasing skills, while trying to guarantee full employment to its citizens. There is at least a superficial parallel with the economy of the southern United States in the 19th century.

As an example of this kind of give and take, let us consider an area that for the moment seems invulnerable to the encroachments of the computer: the movie industry.

A large-scale film with extensive sets, elaborate costumes and a full cast of characters—the sort that was once advertised as "years in the making"—today costs at least several million dollars. But all this money results in one simple object—a few reels of film. Each frame is a complex pattern of dots so small that the eye resolves them into coherent pictures. Television pictures, with far fewer dots, still register as images on the screen.

This means that films and TV are "information industries;" they do not sell an object, but rather an image, a story, a spectacle. Vernor Vinge, a mathematician who is also a science fiction writer, has hypothesized that within a decade computers will be able to duplicate any picture shown to them by breaking down the picture's image on a fine-grain television tube into a pattern of dark and bright patches of different colors.

From this point it becomes relatively easy to make a film. First, painters render the backgrounds in detail. The "director's" character artists prepare portraits and photograph costumes, then display the results to a computer through its television eye.

Following the script, the computer makes the characters move and the background shift, in accordance with the laws of perspective. Only 24 frames for each second of running time are needed, just

as in ordinary films. Artists can depict nuances of facial expression and then the computer makes the faces seem to flow by changing them slightly in each succeeding frame. This is the same process by which some animations are made today, only far more sophisticated.

In principle there is no reason why an image cannot be made with so fine a grain as to seem like a photograph. When such "cartooning" of films becomes possible depends on both computer development and cinema economics. It may not come along as quickly as Vinge thinks, but if present trends continue there is no reason why we should not see the beginnings by 1990.

The end of human-produced extravaganzas will not mean the death of the human film, though. Short films will still be cheaper using human actors and real backgrounds. The computer-made film will probably not require markedly less labor, only a different (and cheaper) *kind*—programmers instead of cameramen, painters instead of actors and make-up artists.

The currently fashionable idea that jobs requiring extensive training are exempt from automation is false. Almost all jobs have a certain amount of routine—just the thing to handle by computer. Take medicine. Electronic processing of hospital records and accounts is now commonplace. At a similar low level of sophistication, computer indexing of medical libraries will let doctors find discussions of unusual symptoms and the most recently developed techniques of treatment. Though not yet widespread, this is a trivial application.

Next come applications in which computers do the work of para-medical personnel. Computers can direct a laboratory doing routine tests like urinalysis and blood typing as easily as they can run a machine shop. They can monitor the pulse and breathing rate of sleeping patients.

They can "take a history" of newly admitted patients, recording the answers to yes-no questions about their past record of illness and symptoms. Several experimental systems developed for this purpose are already working in England and the United States. In one of them, designed by H. A. Haessler of Medidata Sciences Inc., of Waltham, Mass., the computer selects and discards questions on the basis of the answers already given.

The big step is in replacing physicians. It is one thing to have a machine down the hall examine your blood; it's another to let it actually touch you. Would any sufferer permit a machine to diagnose his illness, much less prescribe drugs or perform surgery? We think the answer is yes. The key is gradualism. As medical computers become more familiar and people gain confidence in them, the natural feeling of distrust will vanish. We can see this happening with present-day technology: one of the functions of pilot training is to get the pilot to trust a machine with his body. Or another example: an adult riding an escalator for the first time, lacking this familiarity, often becomes frightened.

Medical computers will find their foothold in the field of diagnosis. When an experienced clinician interviews a patient, he follows a pattern, a logical "flow chart." He starts with the patient's appearance and history and chooses the most relevant question to ask. Like, "Where does it hurt most?" When the patient answers ("in the leg, right here."), he determines if more questions are in order. If not, he considers ordering lab tests. If more questions are necessary, he chooses the next most relevant one and analyzes the answer. Again, if no more are needed, he is ready to order tests. Otherwise, he asks a third question—again, the most relevant one in view of what he now knows. When he runs out of questions, he resorts to tests for further

information—an x-ray, maybe. The first test may suggest further tests, or more questions, or it may tell him what he needs to know to prescribe treatment (simple fracture of the tibia, set the bone).

At each stage he makes a choice and deals with the patient accordingly. This is just the way a computer follows a program with "branches." The hard part in programming the diagnostic process is saying what goes into the physician's choices. He has a way of focusing on the important information, deciding what it implies, and ignoring the rest. Training, experience, his own powers of observation contribute to this skill. Some of it, though, comes down to simple, easily expressed rules. This part computers can do better than men. They can keep track of more data at a time, remember the statistical breakdown of all the thousands of cases involving similar combinations of symptoms, and avoid carelessly ordering the wrong test, like x-raying the wrong leg.

For most cases this is sufficient. Computer diagnosis of the more difficult ones depends on finding ways to codify the rest of a doctor's reasoning. The flow chart depicting how his intuition works becomes highly interwoven and probabilistic. A program duplicating it is not out of the question, but it is unbelievably difficult to write. It has to have several steps, several machine instructions, for each inference he might make.

Writing such a program will require years of collaboration between doctors and programmers. Is all that work worthwhile? Yes, because once it is done, a magnetic tape loaded in the tape drive of a standard computer, plus a remote console suitable for questions and answers, can replace the long costly training of a clinical physician. There are too few doctors now. Our society can opt to train more, shift some of their duties to paramedics as the USSR has done, or computerize. This last alternative

promises to be the cheapest. The great unsolved problem of medicine today is not cancer or heart disease; it is that of supplying regular examinations and a minimum standard of health services to everybody in the country.

Updating and supervising computers will become a new medical speciality. Other specialties will burgeon. Doctors will be free of routine medicine and will concentrate on problems for which well-tested programmable answers are unavailable.

Beyond that point, the interaction between computers and medicine will depend on both economics and human attitudes. Even supposing an economic advantage, automated surgery will not be available within this century; nor would it be acceptable. By the year 2000, further developments will scarcely provoke comment, because the basic idea will be so firmly rooted in the public consciousness.

Computers will have an even greater impact on the teaching profession, if only because there are many more teachers than doctors. More people will be wanting more education, to help them find something to do when not working (which will be almost all the time).

Teaching machines are already with us. They are fine for routine instruction, but not for advanced subjects. Each hour of machine lessons demands a program with perhaps ten thousand computer instructions. The program has to include appropriate responses to all the different wrong answers a student can make. Like medical diagnosis, teaching follows a logical flow chart-like pattern that is easy to code. But it just doesn't pay to do that coding if only a few students will ever take the course.

The big breakthrough that will change all that will come when computers can write instruction programs themselves. At first, humans will help. They will supply the computer with a syllabus and tell it

what facts to teach and in what order. But in two to three decades, it will only be necessary to supply the raw material—books, research reports, diagrams, films—and the course-writing computer will churn out tapes for thousands of teaching computers, teaching human beings how to landscape a garden or read French or what caused World War II.

We will probably see this pattern many times over. As machines take over first rote jobs, then the ones demanding flexibility and creativity, men and women will find more leisure and less responsibility on their hands. They will have more time for occupations that require intuition and human contact.

But man's ego rests on a precarious sense of his own worthiness, and much of his self-respect derives from his work. We can expect a new theme to emerge in the entertainment of the future—the conflict of man and machine. We can expect it to appear frequently in art and literature, too, with the man predictably winning out in the end.

Commenting on this point in his book, *Computers, Chess and Long-range Planning*, former World Chess Champion Mikhail Botvinnik wrote . . . *People have always known that they are not the swiftest runners in the world; many animals run faster than man; but people have always thought that man was more intelligent than any other organism. Therefore man easily accepted the appearance of the automobile, but feels pain at the thought of "thinking" machines.*

At first we will probably see a simple shift of emphasis. Society will come to value the areas in which machines cannot compete, partly because men will feel more comfortable there and partly because computers will (for a while) lack the warm human contact that is a part of any rewarding experience. Such a shift of attention is nothing new. Once the priest and

lawyer were the most prestigious men in the community; now doctors, scientists and businessmen are.

Probably more stress will fall on areas where human agility and adaptability exceed a machine's for the indefinite future—dance, sport, commercial fishing, dealing with animals, entertainment, some types of construction, agriculture, high art, personal services. It is doubtful that crowds will ever thrill to the sight of a machine catching a fly ball or telling a funny story.

In the end, most of us will be working shorter hours. There is some prospect that personal services will expand to require more and more of the work force, as they have been doing for the last half century, but no one knows how long this will continue. There is certainly nothing wrong economically with a future in which we all wait on each other, but it seems rather unreasonable. Many people are not cut out for jobs that entail constant contact with the public.

With shorter hours will come the death of the Work Ethic, as some sociologists call it. Many of today's teenagers seem well-adjusted already to such a world. They reject the materialism of American society as inhuman and are trying to escape it. But there is little chance they will find the partially computerized world of 1985 more hospitable. Perhaps they are in fact the wave of the future—a farther future in which mankind leaves running the economic machine entirely up to computers.

Computers stand ready to replace us in many of our capacities. Some cities—San Jose, California, and Toronto, Canada, for example—use computers to control their traffic lights. The new rapid transit commuter lines coming into service, like San Francisco's BART, are computer controlled. The trend points to the design of other computerized transport systems,

perhaps railroad freight lines and center-city taxis. How long will it be until the sleepless, implacable eye of the machine regards every traveller except those on foot?

National credit bureaus accumulate personal information on their customers in data banks. Government agencies do the same thing. Soon, all records will be computer-processed and nationwide linkups will join all data banks into one superbank. It is realistic to expect that "privileged" inquiries into an individual's character will reveal *every* statement about him ever recorded. When the evaluation of such records is automated and left to the computer itself—a small further step—what will happen to privacy, due process according to common law, job promotion, hiring? What will happen to elections when candidates' lives are an open book to voters?

The trouble with abandoning the steering wheel is that one can never be sure who is going to grab it next. There is a dark side to the computer revolution: the computer as The Ultimate Cop.

Once machines can decipher human speech, with all its accents, bad pronunciation and slang, any government will have an awesome tool at its disposal. The prime virtue of computers is their speed and ability to handle vast quantities of data. A computer which understands human speech could easily monitor all telephone conversations in the United States, listening for key words like "bomb" or "steal." Any conversation with these words in it would go on a record for playback later to the authorities. And from listening for "bomb" to eavesdropping for particular political sentiments is a very small step.

Gloomy pictures like this may come true and yet be only an interlude. There are analogies in the history of technology: the first important use of bronze was in sword blades, but now it is only seen in sculpture

and the domes of state buildings. Computers will become partners, then rivals of men, but they may have a nobler destiny.

Simple extrapolation shows that computers, if they keep improving, will exceed the human brain in raw data processing capacity in twenty to thirty years. Suppose that happens. Suppose that software design, the art of making them perform various tasks, continues to improve. It is in the cards that man and machine will eventually communicate in ordinary human languages. Input devices will enable them to "see," to analyze the structure of the visible world in terms of the same concepts as we ourselves do. They will become able to do more and more of the things the human nervous system can do. They will become, in fact, more and more human.

No one has to accept a lavish prediction like this on faith; either it will come true or it won't. But suppose it does. Suppose that computers become *more than human*. They will still be machines, mechanical and electronic instead of flesh and blood. They will still be under some kind of control, although by that stage men will be as dependent on machines as they on us, and maintaining civilization without them will be unthinkable.

It is reasonable to expect that man's attitude towards his brain-children will resemble that towards his real progeny. When a man's children surpass his own achievements, pride quickly eclipses any pangs of jealousy. These children of our technology will support us generously in our retirement, if we only exercise restraint and good judgement in rearing them.

Then we can send them ahead of us or into fields where we do not dare or care to go—exploring the cosmos, collating the world's knowledge in tedious infinite detail. Artificial superbrains will pursue the roads of artistic, mathematical and philo-

(Continued on page 110)

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IN MEMORIAM: JOHN W. CAMPBELL

July 11, 1971: As we are going to press, the word comes that John W. Campbell, Jr., is dead. Only sixty-one, a giant in our field, his death comes as a shock to us all. Under these circumstances we have set aside our scheduled AMAZING Classic, and, with Sam Moskowitz's kind permission, we are republishing his "JOHN W. CAMPBELL: the writing years," one of his series of SF PROFILES, from the August, 1963, issue of this magazine.

John W. Campbell: the writing years

By SAM MOSKOWITZ

"AND NOW CAMPBELL!"

That was the title of an editorial, set in thick 36-point type, in the October, 1934, ASTOUNDING STORIES.

"In December we bring you a great booklength novel by an author you have asked us to get for ASTOUNDING STORIES. John W. Campbell, Jr. comes to us with a story of vast conceptions, *The Mightiest Machine*. . . . He has been called one of the two greatest science fiction authors . . ."

This was no mere editorial "sales pitch." In the early '30s, John Campbell loomed as a giant among SF authors. *The Mightiest Machine* epitomized the type of story that created his follow-



Sketch by
SCHOENHERR

ings. Mighty space ships moved at speeds faster than light, warped themselves around the woof of another dimension at the whim of Aaron Munro, a mental and physical superman, a descendant of Earthmen, raised on Jupiter, who contrives universe-shaking energy weapons to combat alien fleets.

Like Edward E. Smith, whose *The Skylark of Space* pioneered the super-science space epic in 1928, Campbell was a literary Houdini at the art of convincingly manipulating stupendous forces on a cosmic scale.

But time was running out on macrocosmic spectaculairs. Changes were occurring in plot format and writing methods of science fiction. Yet the impact of that particular story so profoundly impressed a youthful

Englishman, Arthur C. Clarke, that nearly 20 years later he would use some of its elements for the plot base of his *Childhood's End*. At another literary antipode, Richard S. Shaver (or Raymond A. Palmer, who actually wrote most of the Shaver by-lined stories) would adapt Campbell's premise of an evil race that once lived in caverns under Mu as the basis of his "Shaver Mystery."

However, Campbell's major contribution both in story telling and influence on SF was yet to come. And to a considerable degree his early life shaped the direction it would take.

JOHN Wood Campbell, Jr., was born in a two-family frame house at 16 Tracey Ave., Newark, N. J., on June 8, 1910. His father was an electrical engineer with New Jersey Bell Telephone. His mother was Dorothy Strahern, of Napoleon, Ohio, Campbell's home town. After seven years in Newark the family moved to Maplewood, N. J., where John attended public school. Precociously intellectual, young John had virtually no friends. At home, his relationship with his parents was emotionally difficult. According to Campbell, his father carried impersonality and theoretical objectivity in family matters to the brink of fetish; he almost never

used the pronoun "I;" all statements were in the third person: "It is necessary," "one must," "it appears that," "one should." Not only was the senior Campbell an authoritarian but he was also a self-righteous disciplinarian who concealed whatever affection he felt for his son.

Campbell's mother's changeability baffled and frustrated the youngster. Campbell recalls her as self-centered and flighty, her moods unpredictable moment to moment. While not deliberately cruel, her gestures of warmth appeared so transitory and contrived to him as to be quickly discounted. Complicating the situation was the fact that Campbell's mother had an identical twin sister. John could tell them apart. The sisters, Campbell says, were in psychological conflict because John's mother had married first. He thought he was being used as a pawn by his mother to subtly taunt her twin.

The result was, Campbell says, that his aunt treated him with such abruptness he was convinced she hated him. This created a bizarre situation. The boy would come running into the house to breathlessly impart something to a woman he thought was his "mother." He would be jarred by a curt rebuff from her twin, his aunt. This situation became a continuing and insoluble nightmare. Was

the woman standing in front of him "friend" or "foe"? Campbell felt his only "friend" was a sister, Laura, born in 1917. The two got along well, but the seven-year gap in their ages made her always too young to be much of an ally.

LONELINESS directed young Campbell's alert and curious mind into everything. He blew up the basement with his chemistry experiments. Manually dexterous, he repaired bicycles for other kids. For their parents he revitalized electrical appliances. He read omnivorously, particularly myths, legends, folklore, and anthropology. Edgar Rice Burroughs' Tarzan and John Carter of Mars were discovered by Campbell when he was seven. At eight he was perusing Jeans, Eddington and astronomy texts. At 14 he was sent to Blair Academy, an exclusive boys' school in Blairstown, N.J. He succeeded in making only a few friends there; he infuriated the instructors by correcting their "errors" in class. Sports did not attract him, though he developed a good game of tennis and a mild interest in football. Despite four years at Blair, he never obtained a diploma.

One of the few times Campbell and his father saw eye to eye was when the latter suggest-

ed that he enter Massachusetts Institute of Technology in 1928. Perhaps his father's reasonableness in this was partly motivated by John's ingenuity. At 15, in order to get around paternal directives, he had become so facile in the use of logic that the father found himself hard-pressed to justify many of his ideas. This facility at logic was brought aggressively into play in later life whenever Campbell was confronted with dogmatism.

In still another respect a disciplinary peculiarity of his father had a direct bearing in sharpening Campbell's embryonic writing skills. The elder Campbell frequently checked his son's homework, if he didn't approve of a phrase he would demand it be rewritten. To save revision time, John made a game of rewording the phrase in the same line. The result was increased dexterity and economy in the use of words. At M.I.T. Campbell was up to his old trick of straightening out instructors. In one instance, this penchant made him a friend. He challenged a statement by a Professor Blanchard, his chemistry instructor, implying the impossibility of amalgamating iron. Campbell brought in an experimental arrangement and performed the "impossible" in the classroom. Instead of being angry, the professor was delighted and began

to take a personal interest in Campbell, expressing sincere disappointment when his "prodigy" did not go on to make chemistry his life's work.

In his outside reading, Campbell gravitated towards science fiction. He bought ARGOSY fairly regularly, and WEIRD TALES whenever he was certain it contained science fiction. He spotted the first issue of AMAZING STORIES when it appeared in April, 1926, and became a regular reader. When science fiction authors' imaginations showed signs of breaking out of the confines of the solar system, beginning with J. Schlossel's daring *The Second Swarm*, (AMAZING STORIES QUARTERLY, Spring, 1928) dealing with a mass invasion of earth by creatures from Sirius, Campbell was enthralled. *Skylark of Space*, which began in the Aug., 1928, AMAZING STORIES, established in Campbell a life-long admiration for E. E. Smith, and a desire to emulate him.

PAINFULLY aware that SF writers frequently repeated obvious scientific errors, Campbell's own first attempt, a short story titled *Invaders from the Infinite*, was aimed at correcting the misconception that there would be a problem in heating an interplanetary ship in space. The story was sent to AMAZING STORIES, and accepted. Elated, Camp-

bell pounded out a longer story titled *When the Atoms Failed*. That, too, was accepted. His enthusiasm waned, however, as months passed and neither story appeared. Home on vacation in the summer of 1929, Campbell visited T. O'Conor Sloane, the editor.

Now six-foot one, with hawk-like features, Campbell presented a formidable appearance as he was ushered into Sloane's editorial offices. Sloane, 80, had a flowing white beard. But despite his appearance, the old man was anything but a stuffed shirt. He quickly admitted that the manuscript of *Invaders From the Infinite* had been lost. Did the author, perhaps, have a carbon? He did not? Well, his career would then have to be launched with *When The Atoms Failed*.

Sloane more than made up for the disappointment by giving *When the Atoms Failed* the cover of the Jan., 1930, issue, and beginning the blurb of the story: "Our new author, who is a student at the Massachusetts Institute of Technology, shows marvelous ability at combining science with romance, evolving a piece of fiction of real scientific and literary value."

The story *did* contain pioneering concepts. First, though the idea of thinking brains in robots had been used before, the concept of a stationary super-calculator,

like today's Univac, had not appeared in the magazines. Scientists in science fiction, never sissies, had previously disdained to use even an adding machine in whipping together mathematical concepts destined to change the shape of the cosmos. Not so Steven Waterson, Campbell's hero. Improving on an Integrigraph, an electrical machine capable of calculus in use at MIT in 1930, he built himself a pre-space age electronic "brain" to aid in solving his problems.

Secondly, the story delved into the greater power to be derived from material energy—the actual destruction of matter—as opposed to atomic energy. This knowledge enables Steven Waterson to defeat a group of invading Martians, force the nations of the earth to scrap all their weapons, and to set himself up as "president" of the planet.

Then occurred a coincidence destined to gird the faith of doubting astrologers. A new science fiction magazine appeared on the newsstands. Titled ASTOUNDING STORIES OF SUPER SCIENCE, it, too, was dated Jan., 1930. Campbell was to make it his literary monument.

A sequel to *When the Atoms Failed*, titled *The Metal Horde*, appeared in the April, 1930, AMAZING STORIES. It tried to show what would happen if calculators were refined to the point where

they could reason. Scientist Waterson, in the course of the story, defeats and destroys a thinking machine that has traveled through space for 1600 years. Elements of *The Second Swarm* are apparent not only in this story, but also in *The Voice of the Void*, his next appearance in the Summer, 1930, AMAZING STORIES QUARTERLY. This novelet tells of a ten-billion-year-old civilization on earth, confronted by a cooling sun, which utilizes "phase velocity" as a means of going faster than light and escaping to another system. Campbell explained it this way:

"Phase velocity is due to a wave traveling along the wave chain. A man can go faster than the train he is riding on by walking toward the engine, but practically speaking he cannot reach the station before the train. Similarly, the phase velocity cannot reach the station before the light or X-rays do. But for countless ages the light has poured forth from the sun, and a message sent down that long train would be able to go many, many trillions of miles at a speed far greater than that of light."

FEW of the students at MIT during that period seemed to be interested in science fiction.

But Campbell did make the friendship of Norbert Weiner, professor of mathematics, and today famed as the godfather of "thinking" machines. Prof. Weiner helped the young author with the scientific background of some of those early stories and may have been the inspiration of the "thinking machine" ideas.

The names of a group of characters in *Piracy Preferred*, AMAZING STORIES, June, 1930 (Arcot, Wade and Morey) provided the label for a major series of tales that was to catapult Campbell to the top ranks among science fiction writers. In the world of 2126, a team of young geniuses—Richard Arcot, a physicist; William Morey, a mathematician, and John Fuller, a design engineer, chase Wade, a super-scientific criminal, into an orbital trap around the earth. Wade is permitted to join the group instead of being punished. This sympathetic handling of the villain may have been a hold-over from E. E. Smith's creation of a villain named Duquesne in *The Skylark of Space* who was far more popular with the readers than was the hero.

In *Solarite* AMAZING STORIES, Nov. 1930), the group, in a ship powered by "molecular motion"—find two warring races on Venus. They side with one, employing Wade's invisibility de-

vice and paralyzing gas in the process. When the enemy fathoms the secret of invisibility and uses it against them, pellets of radium paint are employed to locate them, and they are finished off with a molecular-motion weapon.

The Black Star Passes, which received the cover of AMAZING STORIES QUARTERLY, Fall, 1930, launched Campbell on his first high wave of popularity. An ancient race of hydrogen-breathing creatures on a planet circling a vagrant dead star sweep close to our solar system and decide to transfer to Earth. In thousands of words of thrilling action (and many thousand dull words of scientific gobbledegook) they are defeated by Arcot, Wade, Morey and Fuller.

The Islands of Space (in AMAZING STORIES QUARTERLY for Spring, 1931) was Campbell's first full-length novel, and he let out all the stops. Exceeding the speed of light by bending the curvature of space, Arcot, Wade and Morey in their good ship *Ancient Mariner* tour a procession of worlds, finding new wonders and challenges on each. Finally, lost in an infinity of light, they seek to find a race that can guide them home. In the process they help decide a war on a world ten million light-years from Earth.

THE novel that followed, *Inaders from the Infinite* in AMAZING STORIES QUARTERLY Spring-Summer, 1932, represented the apex of approval for Campbell's super-science stories. This time, a tremendous ship manned by canines that have risen high on the evolutionary ladder, lands on Earth to seek help against a universal menace. In the *ne plus ultra* of intergalactic ships, *Thought*, Arcot, Wade and Morey search the far-flung star clusters for an answer to the danger, finally discovering it in as pyrotechnic a series of space battles as ever appeared in science fiction.

The year 1931 was a big one for Campbell. He married Dona Stuart; and, having flunked German, was asked to leave MIT. He studied physics for a year at Duke U., and got his B.S. there.

Striving to support a wife while finishing college during the depths of the worst depression in U.S. history, Campbell decided to try for other markets. He sold *The Derelicts of Ganymede* to WONDER STORIES (Jan., 1932). A satiric slap at the probability of a business tycoon coming out on top if he let a poor but bright young man start on even keel with him on another world, this story clearly reflected Campbell's pique with his economic problems. It was followed by *The Electronic Siege* (WONDER

STORIES, April, 1932) featuring Capt. Don Barclay, who breaks up an illicit medical experimental station on a planetoid. Barclay was brought back again in *Space Rays* (WONDER STORIES, Dec., 1932) to aid in the capture of a space pirate. Hugo Gernsback, the publisher was moved to write a special *editorial* in place of the customary blurb for this story in which he offered the opinion that Campbell was obviously writing a science fiction burlesque: "If he has left out any colored rays, or any magical rays that could not immediately perform certain miraculous wonders, we are not aware of this shortcoming in this story . . . We were tempted to rename the story "Ray! Ray!" but thought better of it."

The truth probably was that Campbell wasn't burlesqueing anybody. This was the way he always wrote. The combination of a left-handed compliment and the fact that WONDER STORIES was in financial difficulties soured him on that market. Average rates for AMAZING STORIES and WONDER STORIES in 1932 was one-half cent a word on publication. AMAZING STORIES paid promptly on publication, but its editor, who would eventually shade 90, tended to take the long view. One year after acceptance was a breakneck dash into print for him, and instances where it took

five years were not unknown. WONDER STORIES published quickly, but frequently paid a good time *after* publication. In these circumstances, Campbell was obliged to "go to work" for a living.

He tried selling cars. Then he switched to exhaust fans for homes and stores in the summer. At the approach of winter he took to promoting gas heaters. Campbell convinced a restaurant chain that by converting their *heating* units to gas, they would pay for their *cooking* gas at lower rates and save \$2,500 a year! It worked! Three other companies also signed up for the change-over. But ironically, since it would take Campbell's small company years to install all the business he had obtained, he was now out of a job.

SUBTLY, meanwhile, a change was taking place in Campbell's thinking and writing. It was first evidenced in the introductory passages of *The Black Star Passes*, where an atmosphere of hopelessness and sympathy was engendered for the great people of that dying planet. It began to take form in *The Last Evolution* (AMAZING STORIES, Aug., 1932) where the courageous battle of thinking machines to save their creators from a cosmic menace climaxes in the mechanisms' becoming energy

consciousnesses of pure thought, thus raising them to an allegorical heaven. Our machines will be our friends to the last, will inevitably outlive us, progress beyond us and possibly even go to their just reward, Campbell suggests. *The Last Evolution* was the key transition story in Campbell's writing career, a compromise between stress on mood and the super-scientific action characteristic of past Campbell stories.

While living in Durham, N. C., Campbell set out to write a story in which mood and characterization would predominate and science and action play a secondary role. He had in mind a story that would figuratively serve as a symphonic mood piece in words set to a science fiction theme. This was the story *Twilight*. Seven million years from today, it is the twilight of man. A mighty civilization served by faithful machinery continues to function automatically: "When Earth is cold, and the Sun has died out, those machines will go on. When Earth begins to crack and break, those perfect, ceaseless machines will try to repair her—." But no hope, no progress lies ahead for the dwindling human race, a time-traveler from our day visiting this future, leaves the machines with the problem of working towards the creation of a mechanism with built-in curiosity. The

story suggests, as did *The Last Evolution*, that even if man goes, the machines can build their own civilization.

Despite Campbell's popularity, every magazine of early 1933 rejected the story, and it went back into his files. Then, in late 1933, F. Orlin Tremaine assumed editorship of *ASTOUNDING STORIES* and began a drive for field leadership. He bought E. E. Smith's third story in the "Skylark" series, *The Skylark of Valeron*. The logical next step was to publish Campbell, the leading contender to Smith's popularity. Tremaine wrote Campbell, asking if he had a super-science story along the lines that had established his popularity. Though over a year had passed since Campbell sold *The Mightiest Machine* to *AMAZING*, editor Sloane had still not published it. Nor had he scheduled another novel, *Mother World*. Campbell got back *The Mightiest Machine* and submitted it to Tremaine. It was immediately purchased. Heartened, Campbell dusted off *Twilight* and sent that in. Tremaine went quietly mad about it.

Twilight, rushed into the Nov., 1934 issue, a month before *The Mightiest Machine*, could not be published under Campbell's own name for two reasons: First, and most obvious, it would destroy the substantial build-up in

progress for *Mightiest Machine*. Secondly, it was so different in approach that it would disorient readers accustomed to a certain style of story from Campbell. The problem was solved with a pen name, Don A. Stuart, derived from the maiden name of Campbell's wife, Dona Stuart.

"A new writer," Tremaine blurbed, "a profoundly different and beautiful treatment of an always fascinating idea—*Twilight* by Don A. Stuart. A story of the far, faint future, of the fabulous cities and machines of man—and of his slow decline into eternal sleep."

DON A. STUART at once bid fair to eclipse Campbell in popularity. And *Twilight* was to alter the pattern of science fiction writing. Warner Van Lorne's immensely popular *Strange city* (*ASTOUNDING STORIES*, Dec., 1935) and *World of Purple Light* (*ASTOUNDING STORIES* Dec., 1936) were unquestionably inspired by it. Arthur C. Clarke, in both *Rescue Party* (*ASTOUNDING SCIENCE-FICTION*, May, 1946) and *Against the Fall of Night* (*STARTLING STORIES*, Nov., 1948) displays his debt to *Twilight*. Del Rey's inspiration for intelligent dogs in *The Faithful* may derive from a brief section in *Twilight*.

Stuart appeared again with *Atomic Power* in the Dec., 1934 *ASTOUNDING STORIES*, a story in

which scientists prevent the substance of our solar system from being blown up by atom crackers in the macrocosmos. The lead story of the issue was the first installment of *The Mightiest Machine*, and there was a third story by Campbell in the same issue, *The Irrelevant*. It caused months of debate in the readers' column, since it presented a theoretical method of beating the law of conservation of energy. This was published under the name of Karl van Kampen, the name of a Dutch great-grandfather on Campbell's father's side.

Blindness (ASTOUNDING STORIES, March, 1935), also under the Stuart name, was a poignant sketch of a scientist who loses his sight in space to bring the world the blessings of atomic energy, only to learn that inadvertently another discovery of his provides a cheaper power source. He dies embittered because the world does not want his atomic energy.

One of the most remarkable and underrated performances under the Stuart name was *The Escape* (ASTOUNDING STORIES May, 1935). It was written as the result of an argument with a would-be writer as to whether it was possible to write a successful love story in the framework of science fiction. A girl runs off with a boy she loves to escape marrying the selection of the

Genetics board; she is captured, brought back and psychologically reconditioned to "love" the "right" man.

With *The Mightiest Machine* winning accolades Campbell thought sequels were in order. He wrote three—each a continuation of the adventures of Aarn Munro and his companions. In the first, a 15,000-word-novelet, *The Incredible Planet*, he utilized the device of losing his characters in space, enabling them to discover a world whose inhabitants were in suspended animation for 400 billion years; a second, *The Interstellar Search*, finds the Earthmen aiding a planet whose sun is about to become a nova; and in the final story, *The Infinite Atom*, they arrive home in time to block an invasion by creatures whose previous visit to earth gave rise to the centaur legends.

Tremaine rejected all three.

He felt the day of the super-science epic was past, and insisted that Campbell stick strictly to Stuart stories. Another augury was the mild response to *Mother World*, a three-part serial about the revolt of oppressed working groups. It appeared in January, February, and March AMAZING as *The Contest of the Planets*. The three sequels to *The Mightiest Machine* eventually saw book publication from Fantasy Press in 1949 as *The Incredible Planet*.

CAMPBELL was forced to place full emphasis on Don A. Stuart with a series which he called "The Teachers," beginning in the Feb., 1935 ASTOUNDING STORIES with *The Machine*. In this story, a thinking machine that has provided every comfort for mankind leaves the planet for humanity's own good, forcing them to forage for themselves. *The Invaders*, (ASTOUNDING STORIES, June, 1935) a sequel to *The Machine*, found mankind reverted to savagery, easily enslaved by the Tharoo, a race from another world. *Rebellion* (ASTOUNDING STORIES, Aug., 1935), saw the human race, through selective breeding, become more intelligent than the Tharoo, and drive the invaders off the planet.

These were not primarily mood stories, but they were adult fare—the predecessors of an entirely new type of SF tale.

In *Night*, a sequel to *Twilight*, published in the October, 1935 ASTOUNDING STORIES, Campbell movingly returned to the mood story. A man of today moves into the inconceivable future, when not only the sun but the stars themselves are burned out. At his coming, machines from Neptune stir into motion to serve him, but he recognizes them for what they are: "This, I saw, was the last radiation of the heat of life from an already-dead body—the feel of life and warmth, imitation of life

by a corpse," for man and all but the last dregs of universal energy were gone.

"You still wonder that we let man die out?" the machine said to an unspoken question. "It was best. In another brief million years he would have lost his high estate. It was best." Campbell had matured. A civilization of machines he now understands, is but parody, movement without consciousness. It will not and can never be "the last evolution."

DURING the Depression years Campbell, despite a monthly astronomy article for Tremaine, and some Stuart stories, had difficulty getting food on the table. Campbell's most successful story in 1936 was *Frictional Losses* (ASTOUNDING STORIES, July, 1936), in which a method of eliminating friction proves the ultimate weapon against invaders from outer space. WONDER STORIES had been sold and now appeared as THRILLING WONDER STORIES. Campbell arranged with the editor Mort Weisinger to do a series of stories built around the characters of Penton and Blake, two fugitives from Earth. The best of the group was the first, *Brain Stealers of Mars* (THRILLING WONDER STORIES, Dec., 1956) concerning Martians capable of converting themselves into an exact replica of any object or person.

Closest in quality to *Night* and *Twilight* proved to be *Forgetfulness* (ASTOUNDING STORIES, June, 1937) in which Earthmen landing on a distant planet assume that a race is decadent because it has deserted the cities and mighty power devices that man, in his current state of progress, associates with civilization. Influential as well as entertaining was his novelet of the Sarn, *Out of Night*, in which a matriarchal society of aliens who have ruled Earth for 4,000 years are challenged by Aesir, a black, amorphous mass vaguely in the shape of man, ostensibly personifying mankind's unified yearnings. This device was picked up by Robert A. Heinlein in *Sixth Column* where it helps to route the Asiatic conquerors. *Cloak of Aesir*, a sequel, demonstrated the use of psychology in driving the "people" of the Sarn from their domination of Earth.

Meanwhile, Tremaine's duties had been expanded to cover editorial directorship of several Street & Smith periodicals. He hired an editor for each of the magazines, and Campbell was hired to run ASTOUNDING. He went on the payroll of Street & Smith in September, 1937. Tremaine left Street & Smith in May, 1938. Campbell, now completely responsible for ASTOUNDING, found almost no time for writing.

Few authors made their literary exit more magnificently. From the memories of his childhood he drew the most fearsome agony of the past. The doubts, the fear, the shock and then the frustration of repeatedly discovering that the woman who looked so much like his mother, was *not*. Who goes there? Friend or foe? He had attempted the theme once before with a light touch in *Brain Stealers of Mars*. This time it was for real. *Who Goes There?* (ASTOUNDING SCIENCE-FICTION, Aug., 1938) dealt with an alien thing from outer space that enters the camp of an Antarctic research party and blends alternately into the forms of the various men and dogs in the camp. The job is to find the host and kill "it" before, in the guise of some human or other creature, it gets to civilization. *Who Goes There?* was in a sense one of the most thrilling detective stories ever written. The suspense and tension mount with each paragraph and is sustained to the last. This story inspired A. E. van Vogt to turn to writing science fiction with *Vault of the Beast*, a direct take-off on the idea. In Europe, Eric Frank Russell picked up the notion for *Spiro*, one of his most effective stories. RKO altering the story considerably, produced it as a profitable horror picture titled *The Thing* (1951).

A few more Stuart Campbell stories would sporadically appear. *The Elder Gods* (UNKNOWN, Oct., 1939), a swiftly-paced sword-and-sorcery tale, was written as a last-minute fill-in for a cover story. Together with *The Moon is Hell*, it appeared in book form from Fantasy Press in 1951. Fifteen years after he had quit writing for a living, Campbell still displayed excellent technique in *The Idealists*, a novelet written expressly for the hard-cover anthology *9 Tales of Space and Time*, edited by Raymond J. Healy for Henry Holt in 1954. Scientists aren't always the "good guys," was the point he made; and a high degree of technical development does not necessarily carry with it ma-

turity in dealing with different cultures.

But for all practical purposes, Campbell's writing career ended at the age of 28 with *Who Goes There?* As one of the first of the modern science fiction writers, he had a profound influence on the field. A few who owe him a direct debt have been noted. Many others are obvious. For the more than a quarter-century since he ceased writing, older readers have been haunted by half-remembered echoes in the plot structure of hundreds of stories. It is not strange if sometimes readers shake the hypnotic wonder of the wheeling cosmos from their minds and demand: "Who goes there?"

THE END

John Campbell edited *ASTOUNDING SCIENCE FICTION* for thirty-three years, surely a record among editors of almost all magazines, and a startling one for our field. During his editorship, *ASTOUNDING* led the way repeatedly for the entire field, going first from pulp to digest-size in 1943 (after a brief flirtation with the larger bedsheet size), raising the tone of SF from that of adolescent extravaganzas to meaningful adult fiction and packaging. For the last decade, *ASTOUNDING* has been *ANALOG*, a title change which reflected this growing maturity for the magazine and the field. The number of major-name authors whom John Campbell discovered or encouraged is legion. "I have no plans for retirement," he told me recently. "I intend to go on editing *ANALOG* until I die." His wish was unfortunately prophetic. He died in his sleep on a Sunday evening, apparently of a heart-attack. He almost certainly died a happy man, satisfied with what he had made of his life and at the same time full of plans for the future. May he rest in peace.

—Ted White

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ported black—but not white—immigrants; expelled in consequence from their own Commonwealth of Nations, which fell apart; denied entry to the “rich man’s club” of Europe because of this incredible display of perfidy . . . and now moaning in squalor about the cruel way the world had treated them.

He had half expected America to collapse following the Black Exodus, six years ago, when in response to a collective invitation issued by the member-states of the OAU—tens of thousands of highly skilled black intellectuals and their families had emigrated—to the accompaniment of cries of “Good riddance!” Unfortunately all that had accomplished was to chop off the heads of the Black Power movement, leaving an amorphous quarrelsome carcase which the government found infinitely easier to handle.

Some of those emigrants had been disillusioned. Swallowing their pride, they had applied for re-admission, and had been turned down.

“Told you so!”

So he was not very optimistic about seeing the downfall of Fortress America in his lifetime.

On the other hand . . .

From the moment of Sheklov’s arrival until now, he had been so on edge about successfully cementing the newcomer’s cover that he had paid little heed to the news he had brought. The notion that some alien species might trigger a nuclear holocaust was too far from his everyday preoccupations; he had been sweating and shaking and dosing himself with tranks for fear some petty error on Sheklov’s part would alert the ever-watchful security force that never ceased its surveillance of Energetics General executives. Now

the major obstacle was past—now that Sheklov had been photographed in company with Prexy, when everyone took it that Crashaw, Levitt and the team at their backs were the ultimate court of appeal concerning security—he could coldly review what he had been told.

Amazing. He hadn’t even realized that the Russians had ventured as far as Pluto; naturally, the American news-media did not carry details of such achievements, and his contacts with Russian agents in Canada were sporadic and too brief for mere gossip. And they’d been out there for three years! Fantastic!

A stir of half-forgotten pride in his native land rose at the fringe of his awareness. As always, he slapped it down. For a quarter-century he had been careful to ape the opinions of those around him. He said the proper things about terrorism, bomb-outrages, insurrections, rebs, those ungrateful devils overseas. He took his vacations in the right places: at home, and usually in Florida. Before he married, he had travelled a little, but to the permissible allies, South Africa and Australia. Now and then, on business, he went to Canada—ostensibly to sound out projects which might bring in some desperately scarce foreign currency. He never enjoyed those trips, except in an upside-down fashion. The Canadians made it plain that they too would prefer to sever relations with the States, but it was known in the way such matters are known that if they tried it they would be occupied, like Mexico; things were quiet enough at home for the troops to be spared. So they compromised by flagrantly favoring the East Bloc, and the most heavily patronized

ocean cruises nowadays run by Canadian Pacific were to Vladivostok via Japan.

He had had to turn somersaults in his head now and then. When he first came to the States, he had fully expected there would be a temporary alliance between the two super-powers against China, which might degenerate into shooting war. But that had been a wrong guess. As soon as American forces began to be recalled to fight at home, it had become obvious that the Chinese were going to expand into the resulting vacuum, and unless the two schools of communism resolved their differences fast the Maoists were going to leave the Leninists standing. (What was the distinction between "homousian" and "homoiousian"?)

Hasty conferences, a couple of treaties, the firing of a few scapegoats, and the definition of spheres of influence—not very sharply, because the parties were always jockeying for advantage—had led to the present formally courteous accommodation, which was being strengthened as in both major countries the effects of fourth- and fifth-generation commitment were felt. A little confidence in your ancestors' achievements could work wonders.

And in your own achievements, too. He'd had a bad moment yesterday evening when Lora insisted on dragging that black into the photo with Prexy. Of course, she'd done it in order to embarrass him, just as she'd put on that dress she knew he loathed. Yet, as he'd realised a second later, everyone present who had kids of the same age, including Prexy—for what he was worth—would have sympathised instead of being repelled. It was a kind

of in-group status symbol nowadays for teenagers to keep up this family-scale guerrilla warfare. *Pour épater les bourgeois!* But sooner or later they'd learn that the minds of the bourgeois had been blown long before they were born.

So if anything her grand gesture, inviting this black to the party and parading around with him for hours on end, was more likely to have reinforced than weakened his cover!

Though naturally, it would make sense to have security double-check the boy . . .

Now then: what about this question of the alien ship? What did they imagine, Back There, that he could *do*? He'd made all the suggestions to Sheklov which he could think of on the spur of the moment: financing some sort of hypothetical study of the problem, for example, under the guise of training in management initiative, along the lines of courses he'd heard of many years ago which were given to industrial designers. You invented an imaginary race with three legs, or sonar instead of eyes, or living underwater, and told the students to equip this species with transport and accommodation. But this, although he personally regarded it as an inspiration because it was perfectly feasible to ask some bright young people, "How do we trade with contraterrene creatures?", apparently meant nothing to Sheklov. He kept talking about "an attitude of mind."

Have to go over this again in detail. Say after lunch in the den. Give the room another sweep for bugs first, naturally. But right now . . .

Pressure which had been building up

in his bladder since he awoke finally drove Turpin out of bed.

XIII

THERE APPEARED TO BE a ritual about Sunday in the Turpin household. Sheklov hoped fervently that he wouldn't have to endure it more than once. But apparently Mrs. Turpin's mother insisted on it. Her name was Gleewood, but that had not been the maiden name of Mrs. Turpin. There had been some divorces—a fact which did not in the least surprise him.

Not wishing to seem discourteous, he accepted Mrs. Gleewood's invitation to join her and her daughter in the livingroom and watch Reverend Powell's nationally-networked service at noon—the "lip service," as someone had caustically termed it during last night's party. Peter, looking haggard, came too, several minutes after it started. That triggered off a lecture from his grandmother concerning the disgracefully casual attitude of young people to religion. Then she asked where Lora was, and Peter answered sharply, "Lying on her bed in a drunken stupor—where else?"

Which gave an excuse for another and longer blast. Sheklov sat there wishing the floor would open and swallow him, while Mrs. Turpin—Sophie, as she insisted he call her—simply sat with glacial calmness, sipping a rapid succession of gin atomics brought by Estelle. To reinforce his cover, Sheklov had intended to talk a little with the maid in the family's hearing about their supposedly shared homeland: so far, however, the girl had absolutely refused to be drawn.

It had crossed his mind, very vaguely, that she might not be Canadian herself, but the only reason he could think of for pretending to be was if she was wanted for a criminal offense, and had changed her identity to one which could not be too closely investigated. The Canadians were efficiently uncooperative when it came to answering inquiries from the States about their citizens.

Still, that was irrelevant. Right now, his job was to put himself beyond the reach of unwelcome prying.

To start with, he must get Turpin to have this Danty checked out. Turpin would have an excellent excuse to do so, considering his daughter's connection with the boy. Boy? More like young man. Over twenty, under twenty-five. Hard to be sure owing to his bony leanness.

Had it surprised him to find that a Canadian timber-salesman could quote the *Bhagavad-Gita*? He hadn't shown the least hint of it, just given a nod of satisfaction at the aptness of the passage. True, one did find people who adhered to non-western religions both here and north of the border. But it was so atypical, he shivered imperceptibly whenever he recalled his incredible lapse. He had *had* to utter those words. It was as though someone else took momentary command of this tongue.

Then there was lunch, at which Turpin appeared with a sort of after-shave advertisement bluntness and a forced air of goodwill towards the world, and—shortly after—Lora too, tousle-haired, bleary-eyed, and even more snappish than Peter. Mrs. Gleewood told her what she thought of her behav-

iour, in particular because she had dared to bring a black into her own home, when everybody knew that all the blacks in America were ready to slip a knife in your ribs the instant they got the chance.

"Don't talk to me about that radiated slug," was Lora's sullen answer, at which Mrs. Gleewood rounded on Turpin.

"You know what this rude little bitch needs?" she rasped. "Six months in a reform camp, that's what!"

"Hear, hear!"—loudly from Peter.

Details about reform camps had been included in Sheklov's briefing. He expected Turpin to explode at that. The camps were for incorrigible juvenile delinquents, and the most famous—at Sandstone, Georgia—boasted the highest murder-rate and the highest suicide-rate in the country. But Turpin merely said in a mild tone, "Lora will get over this phase, you know."

"The hell I will," Lora said, and moodily turned to her food.

By the time Turpin suggested he and Sheklov adjourn to the room he called his den, for coffee and liqueurs, it was all the latter could do not to shake his head in inexpressible admiration. Coping with this abominable mother-in-law, this near-alcoholic wife, this homosexual son, this promiscuous daughter, and his job at Energetics General *and* his rôle as the best Russian agent ever to be injected into the States—it defied belief!

When Turpin had assured him that the den was clean of bugs and they could talk freely, he tried to say something of what he was feeling. But Turpin, pouring tiny goblets of Tia Maria, stared in apparently genuine incomprehension.

"Don, I don't see what you mean. Sure, the kids are a bit wild, but I meant it when I said they'd settle down. Granted, I'm sort of sorry about Peter, but it's this protracted-adolescence bit, and it's simply the—uh—the in thing to flaunt your defiance of the conventions for a few years before you straighten your head and cool off. He has girls too, you know, now and then."

"Nonetheless, a family like this must be—"

"My family," Turpin cut in with an air of not wanting to be contradicted, "is my best single cover. Sophie is a first-rate company wife. If it hadn't been for her, I could never have got where I am. I have to endure her mother, of course, but we only see her during the summer; she was a winter place in Florida. I planned the family to be my cover, in fact, so if you have any quarrel with it, you go blame the census department. I have an average number of kids, I give them average allowances, they've had typical educations, typical everything. My only worry has been that sometimes I've wondered whether someone might not figure it was so close to the norm it must be planned."

He hesitated, and then added, "My only worry, that is, until you were wished on me. Are you making any progress?" And added with his eyes: *I hope!*

Sheklov reached for the bowl of sugar resting on a low table between them and stirred a generous spoonful into his coffee; he liked it Turkish-style, thick and sweet. Not looking up, he said, "I'm not a miracle-worker, you know. I shall have to feel things out for a good while before I can do anything positive."

Turpin sighed. "I don't see why someone had to be sent specially," he grumbled. "Or why—if it was necessary—it had to be me who was used to cushion you."

"Also," Sheklov said delicately, "you don't like the scope of my brief."

There was a pause. Turpin looked everywhere except at Sheklov while deciding how best to reply. He settled for candour. "No, I don't!"

"If it's any consolation, it makes me feel awkward, too," Sheklov raised his liqueur goblet. Barely in time he remembered to sip, not toss the contents back. While thinking as Holtzer he made no such errors, he reassured himself; it was trying to straddle his two personalities which—

But that led back to the recollection of how he had exposed himself to Danty.

Maintaining flawless outward calm, however, he said, "In fact, I was going to ask you this anyhow, and now is as good a time as any. How long would it take you to fix me a job with EG—a travelling job?"

Turpin's face went turkey-cock red. He said, "Now just a—!"

"I have the authority to insist," Sheklov murmured.

"The hell you do! Look, they gave me to understand that your timber-salesman cover was fireproof, that the parent firm has been used before and can prop you up as long as necessary!"

"As long as necessary for me to devise an alternative," Sheklov answered stonily. "You know as well as I do—I mean *better* than I do—that even a Canadian isn't allowed to stay in this country without impeccable reasons."

Turpin's jowls trembled. "But they told me I only had to cushion your

landfall. I took it for granted that you had a closed assignment!"

"Nobody said that in so many words," Sheklov pointed out. "In fact my assignment is open-ended, category one. Anyway, why should the idea of finding me a job with EG upset you so much? You must be distributing patronage all the time."

"Patronage!" Turpin echoed, and slapped his thigh with his open palm, like a gun-shot. "This isn't patronage—it's blackmail! Bringing you into EG would be insanely dangerous. I've sweated blood for years, for decades, to make sure there was no one in the entire corporation who had a breath of suspicion against him. I'm damned if I'm going to break a clean record a quarter-century long!"

Eventually Sheklov sighed and turned around in his chair to a more comfortable position.

"Look, Dick," he said, "there's something that doesn't seem to have registered with you yet. Out near Pluto something has happened which is so big that nothing else matters until it's resolved. Doesn't that get across to you? Hell, there *are* alien intelligences! There *are* portions of the universe which are contraterrene! And because one damned idiot government out of all the damned idiot governments we have on this miserable planet has signed away its responsibility to a bunch of machines, you and I and everybody, communist or capitalist, neutralist or whatever the hell, *all* of us, could be hurled back to the Stone Age tommorrow—if we're still alive. Think about it, Dick, for pity's sake *think!*"

It was getting through. He could read it in Turpin's staring eyes. He had

finally managed to smash down the mental barriers in the other's head. And by doing so, inevitably, he had brought the whole affair back into focus in his own consciousness with as much force as it had possessed when he first heard of it from Bratcheslavsky in Alma-Ata.

At that moment, though, a phone shrilled. Turpin snatched at it. It was one of the old-fashioned kind that had to be held to the ear; in that case, Sheklov reasoned, it was probably a confidential line. Modern designs were easier to bug.

"Turpin here!"

There was a crackling. He nodded. "Yes, this is my quiet line. You can talk."

The caller talked. Watching, Sheklov saw Turpin's face go pasty-gray; his eyes narrowed, and he closed his empty fist so tight the knuckles glistened white. He looked as though he was about to swing that fist in sheer fury.

(Continued from page 78)

I am going to make a marker from the parts I picked up below, and I will fasten it at the top.

I ask pubcomp to plot a route for me down the maintenance stairs and ramps so that I can reach the desert, and pubcomp provides the information.

"Yes, I'll come at once," he said thickly when the caller was through. He slammed down the phone, leaped from his chair, and towered over Sheklov.

"You turd!" he forced out. "You radiated bastard!"

"What happened?" Sheklov whispered, thinking of Danty.

"That reserved area where you came ashore! They sent a service crew there today. Know what they found? They found it had been *turned off* in the small hours of the morning you arrived. Turned off! Do you understand what that means?"

Sheklov did. But waited for Turpin to put it into smoking words.

"It means someone else knows you're here," Turpin spat. "And you've put both our necks in a noose!"

-TO BE CONCLUDED-

—John Brunner

Pubcomp adds that there is insufficient data to calculate my chance of reaching the top of the mountain sculpture I have chosen. I find that I am pleased.

—Terry Carr

(Continued from page 89)

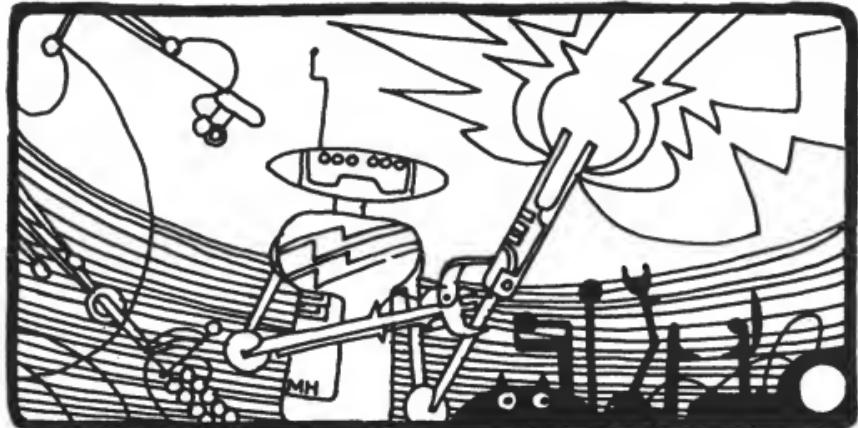
sophical inquiry to their unimaginable destinations. Once computers become able to design other, better computers and supervise their manufacture, they will be able to survive without our assistance.

Computer software specialist Ross Quillian of MIT's Project MAC was recently

quoted as saying, "My loyalties go to intelligent life, no matter in what medium it may arise."

If our heirs are to be machines, that is a respectable patrimony.

—Gregory Benford &
David Book



...Or So You Say

Letters intended for publication should be typed, double-spaced, on one side of each sheet of paper, and addressed to: Or So You Say, P.O. Box 409, Falls Church, Va., 22046.

Ted White:

I caught your editorial in which you mentioned me because some old fan thought I ought to see the cover reprinted in the back of the issue . . . and I read it when I should have been tending to my correspondence. Also read your "amazing" story, "Growing Up Fast in the City" . . . which is, I suppose, telling it like it is.

I hesitate to comment, as I might conceivably sell you something. But I would like to ask . . . did you ever read any Shaver? Maybe you should . . . it wouldn't hurt your style.

And, about the lunatic fringe . . . it has spread late years, hasn't it?

You know, when some one says something about deros in print, I always think they are lying at professing utter ignorance on the subject . . . in the same way that Condon is lying about UFO . . . out of

sheer funk of the possible consequences of not lying.

You see, Ted, while deros, voices, and telaughs-in-secret may be lunatic to you, they exist . . . and are very much a working part of the UFO scene.

To me . . . many other things are much more lunatic . . . like ignoring the dero sabotage of our mental life . . . to avoid their hand on your own efforts to stay above water.

I really do not know if fellows like you *know* about the underworld and lie about it, or if you do not know . . . and so misunderstand the total picture.

I include some "stuff" you may or may not find of interest. And about Palmer writing Shaver's "stuff" . . . he didn't, he only cut out all the sex I put in . . . somewhat ahead of my time. About the time I left the sci-fic scene . . . sex took over as the main theme of sci-fic as well as in other fields.

Your picture of the fan field of that period is slightly off, too. When orthodox sci-fans numbered 1200 paid subs to all

fan-zines, the Shaver fan-zine had 2500 paid subs. 2 to 1 uber alles.

When science fiction died on the vine . . . all publishing of all kinds went down from 60% to 90%. That is, old standbys like the *Sat. Eve. Post* went to the wall with a 60% drop in circulation . . . and many a publisher was wiped out entirely.

This was *not* all due to the popularity of TV replacing the buying public's need for something to look at in their leisure time. This was in truth an almost deadly blow at the vitals of earth's mental life . . . by a systematic saboteur.

It is this alien saboteur I set out to fight with my stories . . . and that fellows like you never got the point has been one of the saddest experiences of my life.

To me . . . "The Masked World" was an effort to tell it like it is, as nearly as possible in a world that is truly masked, bound hand and foot and gagged . . . by an enemy they never see. *But* they hear him, and they hear him mentally all over the world.

These were buyers of Shaver because they *knew* . . . and that is *why* Shaver fan-zines had 2500 paid subs while all other fan-zines put together numbered only some 1200. They didn't much care about so-called "quality" . . . they wanted to hear it told like it is.

That this angle of my writing was never understood really wasn't my fault . . . but is due to the mental grip of the telaug on the majority of the people.

I tried . . . and it galls me somewhat when people who should know better light into me as a lunatic. It really isn't me that is the lunatic . . . it is the stupidity and total ignorance of the "average" Joe who misses the whole point of such work.

It is our society that is lunatic . . . as demonstrated by developments . . . the drug spread, the licentiousness that is called freedom . . . the drop-outs (of whom I number myself one) who have right on

their side but *not* total understanding of what is really going on.

We are being sabotaged by telaug work . . . and have been for centuries.

Only sci-fic readers can grasp the possibility, let alone the facts behind the events. But . . . witness the death of Kennedy, who started our space program . . . and the cuts of the space program by his successors.

It is too big a subject to tackle in a letter. Wish I could get the facts across . . . to people in your position. But after all the years I've tried to be understood with almost total failure . . . I admit . . . we are mentally enslaved with little chance of working ourselves free.

This is the real picture of the furtive UFO . . . mental enslavement of earth. Trace your pollution to earth industries run by alien owners who don't care if the planet dies and everyone on it . . . the sooner the better . . . and you begin to get the picture of UFO into the correct perspective.

We are sabotaged and the death of our planet is imminent . . . and the UFO are seen and heard while the "leaders" weirdly ignore the whole problem.

How do you say "truth" when it is wildly fantastic? How do you "tell it like it is" when only a false picture is generally accepted as the "truth" and all other views of life on earth are considered lunatic?

The truth about our race on earth is far more fantastic than any sci-fic tale ever yet managed to create.

Our hills are buried giant cities . . . and the gigantic structures of early space races litter every landscape one looks at . . . the backgrounds of TV Westerns are replete with cyclopean ruins that no-one ever notices but a Shaver or two.

I offer people the Cyclopean book-rock filled with pictures in all sizes from micro to life sizes . . . without a ripple of comprehension from editors like you or a word

of understanding from those who should grasp the facts . . . easily . . . but never do.

The facts of life are utterly fantastic . . . and our daily "truth" but the maudlinings of mutilated idiots who cannot even see a giant's ruins when they are using the rock for new structures.

So . . . read some Shaver, carefully, once . . .

Richard S. Shaver
Rock House Studio
"Only Source of
Pre-Deluge Artifacts"
Summit, Arkansas 72677

It will astonish you, Mr. Shaver, when I say that I read every word you wrote—for AMAZING STORIES, for Other Worlds, and even for an early issue of If. But I never for a moment took your "revelations" seriously, nor do I now. It saddens me that people of obvious intelligence such as yourself find themselves incapable of assigning the blame for our world's problems squarely where it belongs: with the human race. It strikes me as pathetic when theories and fanciful schemes are offered as an "explanation" which will excuse humanity, and reveal us all to be innocent dupes of cosmic manipulators. The effort to find a sinister explanation for all the world's problems in UFOs, deros, telaugs or whathaveyou, is simply a cop-out, a neat delusionary system by which people absolve themselves of any real responsibility for what has happened or will happen.—TW

Dear Mr. White,

I picked up the July issue of AMAZING STORIES, very eager to read another new Silverberg story, but the first thing that caught my eye was Benford's "How to Build a Solar System." I have always been fascinated by the science involved in science fiction, and hoped for an exhaust-

tive authoritative discussion of planetary systems. Alas, I had to start doubting Benford right off. It may be picky, but who is this Hertzberg who did the diagram with Russell? Some copycat who stole Herzsprung's work? When you find basic details inaccurate, it leads you to doubt the rest. I couldn't find out on the spur of the moment, but is Ganymede actually the most massive satellite? Titan is significantly larger, but all the same, as a satellite becomes large enough (somewhere larger than our Luna) to have a full-scale planetary structure, its specific gravity (and composition) can be expected to be similar to that of the core of its primary. Thus, Titan might be disqualified on the basis of Saturn's lighter specific gravity which in no way "proves" that a larger, more massive satellite might not exist about a denser primary.

The difficulty in speculating on planetary systems is that we have such a limited sampling to go by. Just because we do not find a given situation in the local neighborhood does not render it impossible. Discussing still the question of viable satellites, one might consider the occasionally voiced description of the Earth-Luna setup as a binary planet system. One is led to speculate from local evidence that smaller satellites cannot remain stable at close distances from the central star. One might then find a greater predominance of large, massive satellites within the ecosphere.

As Benford discussed spectral classes and the effect the vital statistics of a star has on its possible planets, I kept expecting one good point to be brought up, but it wasn't. The more massive, hotter stars have less heavy elements in them because the heat prevents stability of more massive electron shells. One could hypothesize that above a given class, any planets formed would be along the lines of gas giants almost exclusively. Certain other reasonable speculations may be drawn concern-

ing planetary characteristics to match a given spectral class of primary. Our own system (excepting Pluto, which messes up a lot of orderly thinking) seems to illustrate a grouping of more massive planets closer in as well as closer to each other. Extending this rather meager single sampling, one might reasonably speculate that a smaller, cooler, hence denser star on the main sequence might tend to form a larger number of more closely spaced, dense planets, thus increasing the chances for a viable planetary body within the significantly narrower ecosphere.

Of course, I also questioned Benford's own creation for a couple of sound reasons. (I wish I could have found a copy of his book in order to check more of the system's details.) Depending upon *how* close Benford's neutron star was to its main-sequence primary, the intense, pin-point gravitational effects of the neutron star could have a most disruptive effect upon the primary. If a system such as Beta Lyrae, involving relatively normal stars, can involve sufficient surface disruption to drain one of the members of its material, imagine the tidal effects of a tiny pinpoint of incredibly concentrated gravity racing about the equator at light-fraction speeds. The entire belly of the primary would be a seething mass of prominences, with accompanying radiation flares of such magnitude as to render the entire system uninhabitable. Depending, once again, upon distance, it could even have the effect of locally turning the primary inside out . . . dragging the core material up through the photosphere along a narrow band. It makes a beautiful image—a banded star, orange-yellow at the poles, graduating rapidly through yellow and white to an intense, blue-white band around the center, accompanied perhaps by a tiny, multicolored halo effect caused by the bending of light rays around the neutron star's gravitational field. The extreme sur-

face disruption at the center would most likely be compensated by massive areas of sunspots midway to the poles. In fact, the entire system smacks of an earthly weather system. Can you visualize the Apollo photos of a cloud-flecked Earth done over in reds, oranges and yellows, with an intense band of blue-white?

I seem to have digressed badly, but the image was a little overpowering. At any rate, until proven otherwise, one must keep a relatively open mind concerning what is possible in a planetary system. As infinite as space is, if an arrangement is mechanically possible, it probably exists somewhere. As long as this is kept in mind, all sorts of fascinating systems can be conceived, such as a binary star system in which the smaller, secondary star drags a habitable planet along at its Trojan point. If you feel like reams of difficult math, how about constructing a cyclically stable system in which a satellite is swapped back and forth between two or three different primaries? Could it work? If a smaller, cooler star produced a number of reasonably dense planets at fairly close distances within its ecosphere, what kind of a culture could evolve? Since condensation, beginning at a cooler temperature, would be faster, such a system could produce intelligent life faster, and space travel would be an immediately practical venture, rather than the case in our system, where years may pass before any real value is found in space travel.

To be quite frank, I find most science fiction solar systems rather boring. Larry Liven and Hal Clement produce interesting planets from time to time, but there is a lot more room for variety than most of our authors ever use.

Maybe, as astrophysics moves on, we can expect some improvement in this area. The frontiers are far wider than Benford indicated.

Marshall F. Thayer
COMFAIRKEF
Box 2
FPO New York 09571

Benford replies:

- 1) Right, "Hertzberg" was a typing error.
- 2) All the data I have indicates that Ganymede is slightly heavier than Titan. Certainly I don't think Ganymede represents some upper limit on a moon's mass; I was simply pointing out that for some reason the 31 moons in our solar system are all rather small. Maybe some statistical mechanism prefers small moons.
- 3) True, massive, hot stars have few heavy elements in them. But their *planets* formed from the dust rotating around the star at the time of formation, so the planetary composition represents more nearly the average content of the ancient dust, not that of the fully formed star. So planets of such stars may not be light gas giants at all.
- 4) I placed my neutron star at a suitable distance from the other star in the system. Thayer is right about the awesome effects that would occur if the neutron star got too close. That's what I wanted to avoid.
- 5) I agree totally about keeping one's mind and eyes open whilst designing solar systems. But too many sf writers don't know the basic physics and astronomy as well as Thayer, and they bungle their creations.

Gregory A. Benford
Alamo, California 94507

Dear Mr. White,

Your editorial in the July issue bothered me quite a bit. While I agree with almost all of what you said about pornography, the general thrust of the editorial seems to me to strike against what I believe in and calls for a reply. I refer to your call

for science fiction authors to probe human sex relationships.

As one who does not believe in either premarital or extra-marital sex, for reasons which I consider good and sufficient, the present treatment of sex in mainstream literature has long made me angry. To probe human sex relationships in mainstream literature has meant to deride the repressions of the old morality, or else to "explain" or "expose" these relationships in a way which rarely condemns them. If anything at all is condemned, it is usually society or a particular kind of social pressure. Often sex is simply used as a way of showing character or story "development" with the author making no overt statement at all on the subject except that he usually treats sex as natural as breathing, the assumption being that everyone engages in it at the faintest temptation. Those few authors whose characters remain chaste (usually in specialized genres like westerns, historical fiction and mysteries) rarely make a real issue of it and often practically apologize for it. Therefore, while it is impossible for me to deny that human sex relationships need probing, I think I have reason to fear in what direction the probing will be done.

Of course, simply because I don't approve of sexual immorality is not likely to alarm too many authors. The trend in society (at least partially caused by the literary world) is in their favor, and they will probably rudely ignore the fact that they are hurting my feelings. However, I think it's time we "old moralists" noted that the opposition is playing unfair. The fact is that we are treated like a powerful establishment and a minority cult at the same time. The number of pejorative words that substitute for substantive arguments used against us is usually reserved for extremist organizations like the Ku Klux Klan. One only has to think of prudish, Victorian, repressed, inhibited, old

fashioned, anachronistic, and frigid. Our morality has been blamed for almost every character disorder of modern civilization. It has gotten so bad that the idea that reasonable man could look at the problem and conclude that sexual chastity is desirable is looked upon in many circles as ridiculous. Only religious fanatics (I myself am an atheist, not so much in that I don't believe in a Creator or even a Christian God, but that I disbelieve in religion—i.e. if a Christian God exists, I dislike Him.) and victims of Victorian parents or sexual abnormalities believe in that stuff any more (no disclaimer for the last two; must avoid a credibility gap). And yet it is *we* who have to defend ourselves as if we were the prevailing morality. It is time we concede that the "new morality" is the prevailing view and attack it as such. In fact, from statistics on the male sex, it would seem that the new morality was always the prevailing view for half the country. For one to admit to being a male virgin in most circles is like admitting to being a Neanderthal man.

However, there are many places where the enemy is vulnerable. For example, there are many sex acts which are very difficult to defend even if the old sex morality is discarded. Adultery is one. Adultery can really only be defended (assuming divorce is possible) if both parties to the marriage have an understanding beforehand. Otherwise it is the basest kind of deceit. One of the most disturbing statistics I've read lately is one which indicates that 50% of all husbands have committed adultery. It is enough to make one ashamed of one's own sex. Coercion or trickery is another. To use the old line "if you love me" or to get your partner drunk or drugged (see J. F. Bone's story in *Infinity Two* as an example I just read) or any other efforts along this line are very difficult to defend morally on grounds which have little to do with the intrinsic nature

of sex. Another is to take advantage of a situation of circumstance which makes your partner incapable of making a free decision. Prostitution is an example, although it perhaps might fall more under contributing to the degradation of another human being. A friend of mine had a girl lock herself in a bathroom and slash her wrists after willingly having sexual intercourse with him. Of course, the girl was sick. But he wasn't, and it's the responsibility of the well to help the sick, not destroy them. The film "Summer of 1942" provides another example. I have not seen the film, but every review I have seen mentions a woman who receives news her husband had died in the war taking the protagonist to bed. No review evidenced any moral qualms about this procedure. I have no doubt the movie made it seem perfectly natural, but it seems to me at least debatable whether a man should take advantage of this kind of grief no matter how eager the girl is (For that matter the whole episode smacks of disrespect for the recently dead husband.). The idea that all a girl (without two heads, although perhaps even then in science fiction) has to do is give a twitch of her head and any self respecting man will fall in bed with her has always seemed to me peculiarly insulting. The list and the examples could go on and on.

But what's the point of all of this? Well, it's mainly to get part of it off my chest (I could go on for several thousand more words but it would widen the scope of the letter beyond all bounds). But it is also to let you know that there's somebody out here that wants any fellow Victorians (I'm 23 years old, by the way) among science fiction writers to stand up and be counted (The horrible feeling keeps coming over me that there are none in science fiction or any other genre, but that's only in my depressed moments.). It is impossible to write about sex (or almost any other sub-

ject) without making moral judgments. In fact, the lack of any pointed moral judgment is usually a judgment. Of course, I am not incapable of liking a story with premarital sex in it (otherwise I'd like very few novels), although I am incapable of liking a story with the "new morality" as its sole or major point. But I do receive a pang whenever a character in a story goes to bed with another outside of marriage with approval from the author. This is not so much because my opinion of the character or the author is lowered as because I keep visualizing the character being included in a Kinsey type survey (or the author), and/or the book being read by thousands of people who receive one more input against my position. In short, I see each incidence as an attack on my philosophy and its chances of prevailing. Of course, an author can be said to be ignoring reality by having sexually chaste characters in his stories, but a case can be made that it is contemporary novelists who are ignoring reality. The latest survey I saw indicated at least 25% of engaged couples do not have sexual intercourse before marriage. I doubt if there is nearly that percentage in contemporary novels.

Sp4 Gordon Stewart Jr.
Ft. Bliss, Texas

Without arguing the precepts of your morality, I must point out that what is at issue has been considerably confused, and that your letter reflects this confusion. The human animal is a sexual creature; "morality" is a way of regulating this sexuality to socially acceptable standards. The morality you espouse as "Victorian" is but one system of morality, and never particularly workable, either. I doubt very much—if your letter is an example of your thinking—that you would actually approve the blatant dishonesty encouraged by Victorian morality during the Victorian area. For a documentation of what I am talking

about, you might check into My Secret Life or any of the other "underground" products of the Victorian era. It would appear that in attempting to deny all but a narrow and rigid area of sexuality, the Victorian morality actually encouraged perversion, dishonesty, and most of those unhealthy aspects of "modern" morality which you deplore. In fact, a good case could be made for the notion that we are still bound by Victorian morality—and that present-day excesses are simply an extreme reaction to this. For myself, I believe that honesty in human relationships should form the basis of any healthy moral system—and that this ideal was badly damaged by Victorian thinking.—TW

Dear Ted:

I'm glad to see that my favorite sf writer, Robert Silverberg, is "part of our 'revolution.'" "The Second Trip" promises to be future Hugo material. Even though these comments are really vague generalizations, I feel they reflect—in their essence—the major reason I read FANTASTIC and AMAZING as soon as I get them, while I let my other prozines' subs languish. In fact, I'm six months behind on reading any of the competition, but I buy every one religiously, because that bolsters the whole field of genre fiction. We just can't afford to be very provincial in our buying habits, given the economic situation. Still, your zines always offer something fresh and iconoclastic—even at the expense of some readers of Victorian sensitivity, if, in fact, any such person would read AMAZING and FANTASTIC anyway. What this verbal stumble means is, I like what you buy as stories, the features you select and the feedback from readers which reflect the vitality of your editorial alchemy. All this, and the personal touch you seem to display in pride of product and the good news on every contents page, is why I resubbed to

your zines, despite the distribution problems and Nizonian stagflation.

Specific comments: Greg Benford is battling the tide when he dissects the major technical—forgetting the artistic clumsiness for a while—fallacies of Niven's second-rate novel, "Ringworld." The majority of fandom will ignore his intelligent objections, because the hype Niven has spread around at various cons—no, self-advertisement isn't by definition wrong, just ludicrous if "Ringworld" is the Hugo-deserving magnum opus many fans have assured me it is—the fact that Dyson's theories are indeed intriguing and contain the types of mind-games fans love to play and the lamentable truth that the Hugos are determined by fringe-fans and neos of the Super-sercon variety. Yes, it seems faanish fans don't vote in numbers, but leave the field to sf fandom's great unwashed masses. No wonder some of the choices aren't so good. This really grates when I wonder what will happen to the records nominated in the Dramatic category—"Blows Against the Empire" by Jefferson Starship and "Don't Crush that Dwarf, Hand Me the Pliers" by the Firesign Theatre—when the musical sophistication of fringe-fans isn't apparent. Oh, and most of the other awards are in danger too, as the Hugos are Popularity contests, not awards to the Best. Sad, so sad, I don't want to write another word about it.

John Berry is also in opposition to the vocal majority of fans. *SFR* will be a milestone in fan history, no matter what its latterday faults. After all, when Geis first revived *Psychotic*, it was a faanish fanzine. John Berry, at least, has that period to look back on with, I hope, fond recollections. I don't—and since *SFR* is now dead, didn't—got into cosmic transports over what Geis was doing, but it seems inevitable that fandom will get a professional fanzine. If it isn't *SFR*, it will be *Locus*, or perhaps *Speculation*, or an-

other zine we haven't even heard of yet. This isn't a good future omen—at least from my viewpoint. Personally, I couldn't abide a zine I knew was being done simply for the money, and the EGO, without regard to the individual interactions that make fandom worthwhile to me. Yes, but even so, that's the way other fandoms are—almost in totality. Rock music fandom—except for Greg Shaw's attempts—is made up of slick movie maglike zines, and newspapers. This discourages the personal relationships I've found most satisfying in fanzine fandom. I'd hate our microcosm to go the way of professional fanzines, but considering the state of other fandoms, we've been lucky up to now. But then again, Charlie Brown did admit, at Disclave, that he printed stuff he didn't like in *Locus* out of monetary considerations, and that he did make profits from his zine—although small. Is this the future of organized fandom? No offense, *Locus* fans, but god, I hope not.

On a more congenial note, let me congratulate Bill Rotsler for his superb short-short, "Bohassian Learns." I'm glad he has writing ability also, besides being the fan cartoonist all fandom knows and loves.

James Tiptree uses some powerful, and beautiful imagery in his short. "Vivyan" is poignant for this reason. I could really feel, through the rhythm of his words, the fictional character's dilemma.

Unfortunately, I didn't dig Nolan's effort that much. The ending didn't really touch me. I've seen to many of those supposedly "snapper endings" with such story-wrenching profundity.

Damn, this is developing into a book review column! Terry Carr is absolutely correct. Here I am, "spewing out" my visceral reactions to the stories in the latest *AMAZING*. I hope what I write is valid for a "consensus of reaction," but I realize I'm only one reader, and *AMAZING* has many.

Even though I'm typing this, I know it is so much bullshit when it comes to objective, professional critiquing of sf. Alexei Panshin, where are you?

David Wm. Hulvey
Rt. 1, Box 198
Harrisonburg, VA. 22801

There was a time—some thirty years, in fact—when sf fandom was a small, closely-knit community in which everyone knew everyone else. But the seeds of success are now sprouting: fandom is larger, more diffuse, and, for some of us, less fun. Nevertheless, fanzine editors like Charlie Brown are simply responding to a need—as did also Richard Geis—in publishing “professional,” money-making fanzines. Hopefully, room will remain for the smaller, friendlier, more intimate fanzines as well. And, speaking of such things, next issue The Clubhouse will be back (it was squeezed out this issue) with a guest column by Terry Carr, while John D. Berry remains in Europe over the summer months.—TW

Dear Mr. White:

In my recent reading of paperback science fiction, I came across the following quote in the Berkley edition of *Best SF: 1969*, from editor Harry Harrison's “Introduction:”

“The case of *Amazing* and *Fantastic* is more tragic. After a brief attempt at quality and responsibility under former editor Barry M. Malzberg . . . these magazines have sunk back to their former low-budget ways. Consisting mostly of reprinted stories from the early and bad pulp days of the magazines, interspersed with a meager handful of indifferent new stories, they are not worth serious consideration.”

He's talking about the issues you edited, isn't he? Funny, but I never noticed the deterioration he claims—and *AMAZING* was nominated for a Hugo on the basis of the

1969 issues, wasn't it? What do you make of this sort of comment?

William Speer
16 West 16th St.
New York, N.Y., 10011

The point to be born in mind is that Harrison was the editor of these magazines (for a brief period) before Barry Malzberg—and that his attitude towards your present editor might charitably be called unfriendly. (I objected publicly to the reviews he published here under the name of Leroy Tanner.) This spring I encountered Harrison in Baltimore, and asked him to justify the statement you've quoted. He insisted that it was true, “when I wrote it.” The copyright notice on the book (which was published as a hardcover a year or so ago by Putnam) is 1970. By 1970 our present policy of limiting the reprints to one story per issue was in effect—it was obvious, in fact, beginning in late August, 1969. More importantly, the ratio of new stories to reprints was first improved by editor Joseph Ross, whose job Harrison sought and took. Each editor since Ross did his best to continue improving that ratio—a rare unanimity which still unites us all. As for the quality of the stories published under my editorship, “indifferent” is Harrison's value-judgment, and I won't argue relative taste. But among the stories I've published have been several by Barry Malzberg, whose publicly expressed opinion of my editorship would seem at odds with Harrison's. AMAZING placed third in the Hugo voting for 1969, and as for what I make of Harrison's comment, I think it's typical of the man.—TW

Dear Ted White,

Forty-five years is a long time for a magazine to survive; I only hope *AMAZING* makes it to the 50th mark. *One Half-Century of Science Fiction!* Yes, indeed, that

would be quite impressive. The Post Office might even issue a stamp in science fiction's honor.

Your editorial was one of your best; the only one I can recall enjoying more was the **FANTASTIC** one in which you related what went on "behind the scenes" while putting together the magazines. From your short history of **AMAZING**, I'd say that its present-day problems probably started with the house hacks, especially under Fairman's rule. While *Astounding* was gaining a reputation as an adult, "modern" science fiction magazine, **AMAZING** was stuck with a pulpy, juvenile aura. In the end, I think this is what dragged the magazine down. After all, both **AMAZING** and *Astounding/Analog* were produced by big publishing houses, and got approximately the same distribution; but **AMAZING** looked too much like a second-rate *Analog* (at least to the impulse buyers), and so was passed by . . .

Luckily, you seem to be avoiding this image. Imitating *Analog* is silly and useless, since no other sf magazine can afford what it does. You have to create your own quality, adult image; *F&SF* has done this admirably, and I think **AMAZING** is beginning to get it too.

Ursula K. LeGuin's "The Lathe of Heaven" is all you promised; I thought the first instalment was rather slow and uninteresting, but the second part more than makes up for it. LeGuin has a very convincing, realistic touch; too many novels and short stories end on a false note, and you just can't *believe* them, no matter what other good they may possess. I particularly liked the sequence where the Alien gives Orr the Beatles record; the whole scene there fits together beautifully, and the pinch of nostalgia thrown in is perfect. *Sigh* I'm definitely going to have to find time to reread *that* novel . . .

I am always suspicious of editors that publish their own stories, but since you

seem to consistently outrank your other contributors, I think I'll just keep my mouth shut! There was one fault about "Growing Up Fast in the City," however, which I seem to find in a lot of your science fiction (or at least what I have read by you): while the characterization is good, the backgrounds seem a little dull and grey. In this story, for instance, the contemporary scene is just slightly changed. In "A Girl Like You" that is also somewhat true. Even in your novel *By Furies Possessed* the backdrop of an overpopulated, polluted, urbanized, etc., world seems sort of ordinary and unexciting. (Actually, that type of background is becoming as "Standard" as the space patrol-blasters, etc. routine of a decade or so back.) I guess I'm just wishing for a little variety . . . But then, Jack Vance doesn't characterize as well as you, so perhaps my complaint is just a matter of relatives/preference. (By the way—any Ted White short story collections coming up?)

"Weapon Shops of Isher II" is a half-funny, puzzle story, of the kind *F&SF* has too many. Some people may enjoy them, but for me they've become almost indigestible. "By The Book" is simply awful; Gene DeWeese & Robert Coulson ought to be ashamed! "Night-Eyed Prayer" by Grant Carrington is a nice mood story, but somehow this rather vampirish story would fit better in **FANTASTIC**, I think. I wish you would get some short stories by Australian writer Lee Harding—I read his story "The Custodians" in the May issue of *Vision of Tomorrow*, and was incredibly impressed. Harding has a fine gift for characterization.

Your "Portfolio" was interesting to look at, though not for its artistic value; the only cover I thought was any good was the one on the first **AMAZING**. But it certainly was a welcome change from the (usually) terrible "classic" reprints you have. Perhaps you could have more

"period" reprints—i.e., stories, articles, and artwork which may not be very good stuff today, but which has "historical" value. I, for one, would be interested in seeing what Hugo Gernsback wrote in his first AMAZING editorial! (We reprinted it a few years ago.—TW) I really like Jeff Jones's cover painting; perhaps it may be of the same series as that one on your January issue, but I like this one much better. I think the plain, dark background is what caused so many people to dislike it; there just wasn't any detail in that painting to give it texture or variety. If Jeff Jones would have just added some stars to the background of his painting, I believe you would have received much fewer negative reactions. But artists receive enough instructions on how to paint without having people tell them when to put stars in their paintings or not.

The recent trend toward original paperback "magazines," and especially the transfer of *New Worlds* into paperback format, reminds me of the change to digest-size which occurred in the 50's. Perhaps this change is just a natural one that must occur to combat dropping sales, poor distributing, etc. I only hope that AMAZING manages to adapt, and that it doesn't lose any of the personality and flavor you have brought to it. For in this age of "dehumanization" and cold "professionalism," you, Ted, have endowed AMAZING with a rare and unique quality . . . Keep it up!

Cy Chauvin
17829 Peters
Roseville, Michigan

P.S. How come there aren't any *Best From Amazing* anthologies around? I'd like to get a collection of stories from AMAZING (to compare with what you're publishing today) but can't seem to find any . . .

Funny you should mention that, Cy. Doubleday did such an anthology a few

years ago, edited by Joseph Ross, which Belmont republished a year or so ago. Currently, I'm putting together companion volumes on AMAZING and FANTASTIC for MacFadden-Bartel, hopefully the first of an annual series. The first volumes deal with the early fifties and early sixties; later volumes will cover more recent years.—TW

Dear Mr. White,

Just bought the July AMAZING with the sharp new binding. I finally understood and enjoyed "The Peacefulness of Vivyan" by James Tiptree Jr. when I re-read it. Funny to have two stories in the same issue with Mexico dressed up in science-fictional clothing as a planet.

None of the definitions of sf offered here or elsewhere seem to me to capture the essence of the *genre*. Maybe there is no essence to be captured. Whatever looks and feels like sf is sf. Can Ursula LeGuin, Hugo Gernsback, Philip Jose Farmer, and George Orwell (these are not my favorite authors; I am picking almost at random) really be brought under one clear definition? If not, who cares?

One possible criterion for judging an sf story: Could it have been written and executed in another medium without any loss? The sf elements in "Border Town" seem to me mostly window dressing. The story could have been written in the present day about, say, Tijuana, and very little would have been lost (only the lighting effects). Much as I liked "Vivyan" most of the sf elements seemed to me peripheral, not central to the story. If the story is really about "the vulnerability of innocence" why put in sealmen, coenichymes, etc., as distraction or ornament? Now, *The Lathe of Heaven*, *Ubik*, or *Dune* couldn't possibly have been written in any other medium. The sf elements are central to the story.

Well, I love this magazine once again. You have a steady reader.

(Continued on page 126)

other narrative artform? The fact that its impact is primarily visual? Or—the fact that a film must show, rather than suggest?

Searles misses the point altogether, when he says that "Science fiction, as literature, has become a very sophisticated medium [*it isn't actually a "medium" at all*], with unique ideas and premises that need some background in the field for comprehension (ftl travel, c-t matter, etc.). sf as film, on the other hand, has been fairly primitive, since so many of its more advanced concepts were expressible only in words." Not one of those "advanced concepts" is to be found in the earliest recognizable sf; some, like contra-terrane matter, required whole novels (*Seetee Ship*, *Seetee Shock*), published (in magazine form) in the late forties, to bring them into the standard sf lexicon. (And there is no reason, beyond the one I'll go into in a moment, why exactly the same progression could not be followed in films.)

More importantly, none of those "advanced concepts" is presently unknown to the average movie-goer, especially the younger movie-goers. *For twenty-five years these same "advanced concepts" have dominated the comic books.* A whole generation—perhaps two—has grown up taking these far-fetched and "sophisticated" devices for granted! The only reason Hollywood hasn't taken advantage of this fact is that film studios are dominated by old men—whose awareness of comic books is undoubtedly remote, and upon whose lives such factors have had no impact. It is these out-of-touch men who have trotted out, time and again, the old cliché that sf is esoteric and its taken-for-granted devices alien to the movie-going masses. That doesn't surprise me nearly so much as the way in which people who should know better have parroted the same tired line. It is, let us face it, nonsense. In all likelihood, sf is best known to the public for

its most juvenile forms—and these are exactly the areas in which our "advanced concepts" are most shamelessly prostituted.

Nor, for that matter, are such ideas "expressible only in words," as *Star Trek*, for example, made plainly obvious. Matter transmission—although illogically exploited by that series—was instantly understandable when demonstrated. A single visual demonstration was far more striking than the best written description might have hoped to have been.

So much for that, and back to my point.

The real reason few good sf films have been made is that it costs too damned much to *show* what a writer can easily suggest.

2001 is a case in point. Arthur Clarke wanted realistic mockups of space ships, a moon base, and a lot of other advanced, but near-future (ideally, anyway) hardware. And he wanted them convincingly demonstrated. And that's where a vast amount of money went.

It's not impossible to find existing locations evocative of the future, of course, but in a near-future and rather pedestrian way. Genuinely futuristic cities—the sort envisioned by a Bucky Fuller or a Paolo Soleri—would require an extremely expensive set, especially if one wanted to give them a genuine, lived-in look. And alien landscapes and the like, if they are not to look like the back lot jungle at Universal, require more than a colored filter on the camera. So much of the *strangeness* we take for granted in the settings of our sf stories is prohibitively difficult to realize in film in a convincing fashion.

This isn't too surprising, because film is a literal medium. At its least-defined, film still leaves rather little to the imagination, and then this quality is defined better by what is *not* shown than what is. (Remember *The Thing*? Howard Hawks had the right idea: the alien is never com-

pletely glimpsed. And our young imaginations filled in the details far better than any Hollywood makeup man could.)

All this talk about the literature of sf being only *words* astonishes me. Words, after all, are at once the most precise and most subjective of all tools for communication. Words are a gateway, in fiction: they unlock a vista for us in our own minds—transforming our imaginations into movie screens far more vivid and exciting than any literal visual image possibly could.

It is in this fashion that films—and, more importantly, television—have dulled the imaginations of those who are most immersed in them. And it is this so very *literal* quality that is film's biggest handicap.

I find it instructive to compare Clarke's novel, *2001*, to the movie (which I'll call Kubrick's *2001*). Both strike me as rather pedestrian and below the optimum levels of the two men involved. That, I suspect, was inevitable.

But inasmuch as Clarke explains what is obscure in the movie, he is telling us "what the movie was about"—and thus puts to an end any quibble about what was actually intended.

More important, however, are those areas in which book and movie diverge. Let's pick one at random:

In the movie, as the spaceship from Earth approaches the space station, we see that the station (to the tune of "Blue Danube") is turning on its axis (I imagine this was to provide artificial gravity. If so, it was much too slow to provide anything approximating one g.). The ship approaches a docking area on the station's axis, and, as it comes close, goes into a barrel-roll to synchronize it with the docking area's spin.

This is, of course, an unlikely maneuver, and Clarke rightly recognizes this. In the book, the docking area has a counter-spin

equal to the station's spin, and is in effect stationary, so that the ship need indulge in none of those complicated acrobatics.

Why, then, this divergence between book and movie?

The book is surely a better expression of Clarke's opinions, and it cannot be coincidence that its final version postdated the movie, and that it was released after the movie. Clarke is correcting Kubrick—as well he should. But why did Kubrick need such correction? Why didn't the movie follow Clarke's original script?

Because it looked better this way.

Over and over, this point is reinforced by the other differences between book and film. The entire HAL sequence in the film is annoyingly illogical—and all the more so since it is the one sequence most framed by "logic." It is not enough to say that it is purposefully illogical. It is not, at least not in the sense its apologists mean. I have no intention of quibbling over the way this sequence is handled in the movie, because I did so once—in a fanzine—and it required page after page of exposition. Suffice to say the book version makes much more sense.

Why?

Because a film is a continuously ongoing experience, in which few of us pay overmuch attention to the logical construction of events, while a book exists as a whole, may easily be reread, paged through, and considered in such a vein.

Why did Kubrick lay out the HAL sequence so "poorly" from a logical (even, sensible) viewpoint? *Because it looked better.*

Nearly everyone who has expressed admiration for the film of *2001* has poor-mouthed the book. The kindest words lavished upon poor Clarke's novel have been "pedestrian," and "second-rate." Most apologists for the film have recommended the book not be read.

This interests me, and for reasons I'd like to go into at greater length. But first, let's examine the book and the criticisms it has received.

Most critics have pointed out that it was not awfully well-written—although there are sections on which Clarke has bestowed his greatest passion for the romance and sensual wonder of alien worlds. (Clarke has said, in connection with *2001*, that he considers the genuine wonders of our universe far more awe-inspiring than any melodramatic fiction. He also said that the locale of the final encounter with a slab had to be shifted from Saturn—in the book—to Jupiter, because Saturn, in cinematic closeup, is “too unbelievable to look real.”) But basically the novel is rather ordinary and dull.

The movie, in its original rough-cut, was exactly the same. Like the book, it explained its wonders, spelling out some of the most obvious ones with subtitles, in fact. It was long, banal, and insufferably slow-moving.

Kubrick elected to remove the obviousness of the banality. He simply deleted all the explanations.

The result was a film which puzzled a great many people on its earliest showings. The entire sequence in which the protagonist travels through hyperspace (or whatever) was taken for a psychedelic fantasy, and many film critics apparently thought the trip ended on the surface of Jupiter. (This was but one of several interpretations expressed in print by some of the major mundane film critics.)

By deleting key explanations from his film, Kubrick created artificial ambiguities.

Several of the younger, more “turned-on” critics have rejoiced at this. It has allowed them to read into the movie sweeping personal interpretations, few if any of which were apparently in the minds of Kubrick or Clarke. (One minor but

well-publicized example: the fact that HAL is IBM transposed back one letter. Several critics devoted whole theses to this “fact,” and read into it a sweeping denunciation of computer-technology and its supposed dehumanization of mankind. But computers have not in fact dehumanized men—lifting from men's shoulders the drudgework a computer does is probably one of the single most *humanizing* developments of our century!—and as nearly as I can tell from what both Kubrick and Clarke have said, this wasn't their purpose in making the film. As for that transposition of letters, it is, they have said several times publicly, purely coincidence.)

The cult of subjective criticism reached some sort of nadir in the interpretations to which *2001* was subjected, but to me this is hardly more distasteful than the cynical way in which Kubrick exploited this pseudo-controversy.

The plot of *2001* is altogether straightforward, if not a cliché: it's one of those mankind-in-an-alien test-tube stories, lacking only the scene in which the aliens create Adam and Eve and put them in Eden. We are shown sub-human primates coping poorly until an alien artifact stimulates their mental growth and prompts them to make tools. This is presented with considerable pseudo-realism, but is absolute bunk, as any paleoanthropologist could have pointed out. (Tool-use predates even the sub-humans depicted in *2001*.) It is a grand and meaningless cliché.

The dawn-of-man sequence is a prologue. The story deals with the discovery of the slab on the moon and the resultant trip to Jupiter. It's not well told; we follow no central viewpoint character and very little—such as the reason for going to Jupiter—is explained. The entire subplot with HAL is totally extraneous and apparently exists for padding. The voyage through hyperspace and the transformation of the astronaut concludes the story with the

suggestion that man is being nudged up the next step on the evolutionary ladder, with the final scene an epilogue.

Reduced to its fundamentals, *2001* is neither coherently plotted nor well resolved, and its basic story is a reshuffling of old clichés.

But *2001* exists as patterns of light on a screen. It exists as a *visual* experience. And, as a visual experience, it is spectacular.

Indeed, it is a Spectacle.

This, in the end, is what excited its audience—and all the more so if some of the members of that audience were stoned or tripping on drugs. Like *Yellow Submarine* (a film I much preferred), *2001* becomes a sensual experience from which the intellect is—or should be—disengaged.

Is this good?

I can't argue with it on its own terms. I can't call it "bad." But I think it is a mistake to consider this good *science fiction*, and a worse mistake yet to intellectualize about it.

Perhaps what saddens me the most is that there was really no reason why a good, well-plotted, vividly characterized, *meaningful* story could not have been filmed in exactly the same way, as a lavish visual treat, Cinerama and all. We needn't have settled for so little cake under the icing.

Notes from here and there:

We are indebted to would-be sf writer and sometime editor (*New Worlds*) Charles Platt for one of the most unusual promotion efforts upon our behalf in recent times. Mr. Platt, whose reputation among those who know him is certainly not undeserved, apparently conceived the notion of a scurulous and scatalogical advertisement for this magazine, and placed it in the name of "The Rare-SF Mail-Order Company" in the program book of the recent British national sf convention. Using the name and address of

one "C. Resnais," who may have been one of his legion of American female admirers, Mr. Platt created a full-page ad, most of which was given over to "a neat jigsaw"—thirty snippets of a drawing arranged randomly. When cut out and properly assembled, they constituted a crudely obscene cartoon, the object of which was this magazine.

Mr. Platt, never noted for the subtlety of his strategems, then followed up on this ad with a letter, ostensibly by one "Leslie Smith," in which he indignantly called attention to the actual content of the jigsaw puzzle—including a xerox of its assembled appearance—and attempted to shift all blame for the ad onto Peter Weston (editor/publisher of *Speculation*, and chairman of the convention), whom he apparently venerates almost as greatly as he does us. Copies of this letter were sent to us, to Weston, and to the editors of fandom's two largest news fanzines, *Locus* and *Focal Point*.

Under the circumstances, we can only regard with something approaching awe the activities of Mr. Platt, and hope that some day he will be the deserving recipient of a just reward.

In quite another vein, I'd like to thank Lisa Tuttle (whose letters have appeared in the letter columns of both this magazine and *FANTASTIC* from time to time) for letting me see a copy of her Syracuse University paper on this magazine. She has done a thorough job and her assessment is, I think, a quite realistic one. The nature of her paper underscores to me a fact I consider to be of considerable importance, and that is that the fans and readers of science fiction are probably better informed and more knowledgeable about the publishing industry than almost anyone else who is not directly involved with the industry. Indeed, I suspect that by and large most sf fans understand the field and

its exegencies better than quite a few professional writers—many of whom regularly exhibit a frightening naiveté about the mechanics of their chosen profession. I'm not quite sure why this should be, but perhaps the fact that science fiction fandom serves as a clearing house for such information and knowledge is the best explanation. Professional writers in this field have always been divided in their attitudes towards fandom—despite the fact that a great many former fans have become professionals—and those who have cut themselves off from fandom or refused to recognize its virtues have also unwittingly cut themselves off from fandom's accumulated body of knowledge about the field. I see no reason why this condition should persist—and even less for the snobbish condescension exhibited by some who write science fiction towards fandom—since there is ideally no conflict between the two areas and both are united in a common interest: science fiction.

In any case, I think papers like *Lisa's* deserve wider circulation—and most obviously so among science fiction writers themselves.

The interest in science fiction in the

nation's schools continues to grow. This spring I was invited to speak at the Groveton High School, in Fairfax, Virginia, by Mrs. Marian Mohr, and I addressed (on two separate days) the freshman and sophomore English classes of all seven periods in what turned out to be a quite rewarding series of sessions. High schools have changed a bit since I went to mine—the school appears quite liberal in such matters as dress codes, for example (when my class showed up one day in Bermuda shorts, the principal sent us all home to change into "proper" clothing), and the classes seemed full of bright and responsive kids, several of whom argued such sophisticated topics as future changes in morality.

I was equally encouraged by the members of the faculty with whom I spoke. All were young and enthusiastic about teaching and about science fiction—a subject which several were only just discovering. I enjoyed the opportunity to talk with everyone, and I'd like to take this opportunity to publicly thank them all for a very pleasant occasion.

—Ted White

(Continued from page 121)

Jeffrey Rensch
2433 Via Sonoma
Palos Verdes, Calif. 90274

The debate over "transplanted" sf rages on . . . My own opinion is that if the medium of science fiction allows an author to make a point clearly, it is immaterial

whether or not he could also have made that point in a non-sf story. The fact that you enjoyed "Vivyan" is more important, I think, than any other.

. . . And that wraps it up for another issue. Keep writing. It's impossible to print every letter, but they are all read.—Ted White

TO SUBSCRIBERS

Due to the change in printers, the July and August issues of AMAZING were shipped late by the Post Office. We have rectified this and feel that all future issues will be shipped on time.

when the dam's finished," he said. "There's plenty of capacity. The basin will take a year to fill anyway. Kind of pretty, isn't it, with the sun shining through."

"Damn the dam!" she said. "What kind of a universal monster are you. How did you learn—"

"By the time the road reaches the dam site," he interrupted, "it'll be up to spillway height and we can lay across at half speed or a little better—"

"How did you learn to coordinate!"

"It's such a slow sloppy job. Farmers are basic. Authority of my specialty. Need to know," he said. "The learning machine restrictions are ridiculous. Squeeze a man to fit a specialized box—no wonder this outfit runs at about one fifth capacity—18% the best I could figure it. Well, I've got that kicked into the 70th percentile and in another few days when I can shake a gravel-cracker loose—"

She was stiff beyond anger. "Continuity, tradition and the assured future—" she began.

"What you buy with circumscription is inefficiency. The open future is unknowable. The only way is to make the present from the past, not by a limited projection to a handbuilt future."

"No security. No certainty." She was glacial.

"You are so right, Sessi."

She looked at him loathingly. "Farmers are despicable. What do you gain by such disruption? You were engaged to bury and nurture seeds. Have you buried them?"

"Oh, well," said Croner. "Let's have another look at reality. You hired me to establish agriculture, not bury seeds." He worked the keyboard again with painful slowness, made a mistake

and cancelled, and then the blur of the theatre turned to a mushroom building alongside the road. The circles of nararl sand were covered with plants in different stages of growth. The tallest was in first flower about 3 feet high.

Sessidondrimi was deadly silent.

Croner said, "I began to wonder what happened to all the organics separated from the minerals in the road material manufacture. It turned out they were stored and prilled and used as nararl sand, according to custom, habit and practice." She had nothing to say and Croner continued, "I set out simple check plots on a simple-minded trial and error basis. There's a nitrogen reaction. It's not a nutrient response. It could be pH or salt index increase, I don't know what. I have a hazy theory that in this case the nitrogen damps out effects of local root diffusates. It takes a minimum of 5 pounds of actual nitrogen per acre, and it's odd that organic and synthetic give the same results."

She controlled herself. "Root diffusates?"

"Ask your microecologist." He relented and said, "Every plant exudes a complex liquid to absorb nutrients and deny local access to other roots. That's the general idea. Farmers can't know everything. Somewhere in your silly, limited operations system you have outstanding inorganic chemists. You can have them make nitrogen or you can check out sterile mineral sand for the nararl beds. Or grow the stuff in unconcentrated native soil. Indications are that nararl can make it, once established."

"You are a curious man, Con-croner," she said quietly. "You deny your own future—" she waved away his

protest, “—and disrupt the present. Let me make clear your status. ‘Know your enemy,’ ” she quoted. Her eyes changed lustre, chatoyant red. “You are the monster we foresee. You personify the barbarian hordes. The wild irresponsibility you demonstrate is cautionary to us. Concroner, you are a traitor to your kind. We could have buried the seeds. By your manners and morals you have betrayed your world!”

“Uh-huh.”

“Concroner will be a name of shame forever!”

“Oh, wow.” He sighed. “No question, Sessi, you’ve got to get squared away if we’re going to meet as equals. Keep going the way you’re going and with the best intentions, we’ll chew you up like a handful of grapes.”

She spluttered.

“We’ll put you in Mother Hubbards and cast-off Iowa pants. It’s good fun to build farm-to-market roads on primitive planets and maybe in a quick thousand years the natives will be dumb and happy as you. But if you’re still dewy innocent when we meet, it will be a bad show for both of us. We have unpretty examples in our history

of what happens to overwhelmed cultures. What I’m trying to do here is help you out of this foggy dream world. As equals, we’re not altogether incompatible—”

He worked quickly at the keyboard as if he had set the situation once before. “Okay, that’s it,” he said, and went to the door.

“What are you going to do?” she demanded.

“Show Primrose a better way to make gravel.” He left the room and she bit her lower lip. She walked hesitantly over to the doll theatre. She pressed the execute key.

Concroner was on stage, kissing her masterfully.

He stuck his head through the door. “How do I know what I’m going to do? Ask me in a year. I can’t read the future.”

Her red eyes blazed, though he was not sure with what emotion, as the door closed behind him and he went off to do what farmers like to think they do, carry the world on their shoulders and the best they can.

—W. Macfarlane

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(Continued from page 59)

hand here. You'll do what we say or we'll blab the whole story."

"I doubt that," Odom said. "What prevents us from having you killed?"

"Nothing, but I don't think you will. It isn't necessary. All we ask is that you return the girl's husband."

"And get me off this planet," Rejie said. "After a year, I'm sick of this place."

"I think all of us would rather move on," Hallmark said, "unless you have an objection."

"Certainly not," Odom said, getting to his feet. "I wouldn't have it any other way. I'll try to find the girl's husband. With luck, we should have you on your way before nightfall."

"And I'll need a letter of explanation. Make up your own lies—you're good at it. I don't want to have to stand trial for desertion."

"I'll take care of it," Odom said.

When they were alone, Rejie turned to Hallmark and asked: "How did you

figure that out? It's fantastic. Fight a war to stop a war."

"Sometimes the fantastic is the most logical," Hallmark said.

"And, you know, it works," Miriam said. "I've been here three years and I've never seen such a peaceful place. All their energy goes into this war."

"I hope we haven't blown the whole bit," Rejie said.

"I don't think so," Hallmark said. "They'll announce that the peace negotiations have failed and the war effort will have to be re-doubled."

"That's fine with me," Miriam said. "Just as long as I'm far away from it."

"You will be. Rejie—why don't you find a pencil and some paper. I want to play tic-tac-toe."

"I thought you didn't like games, Hallmark."

"I love games—once I figure out how to play them."

—Gordon Eklund

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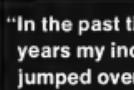
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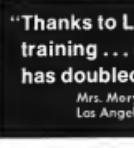
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